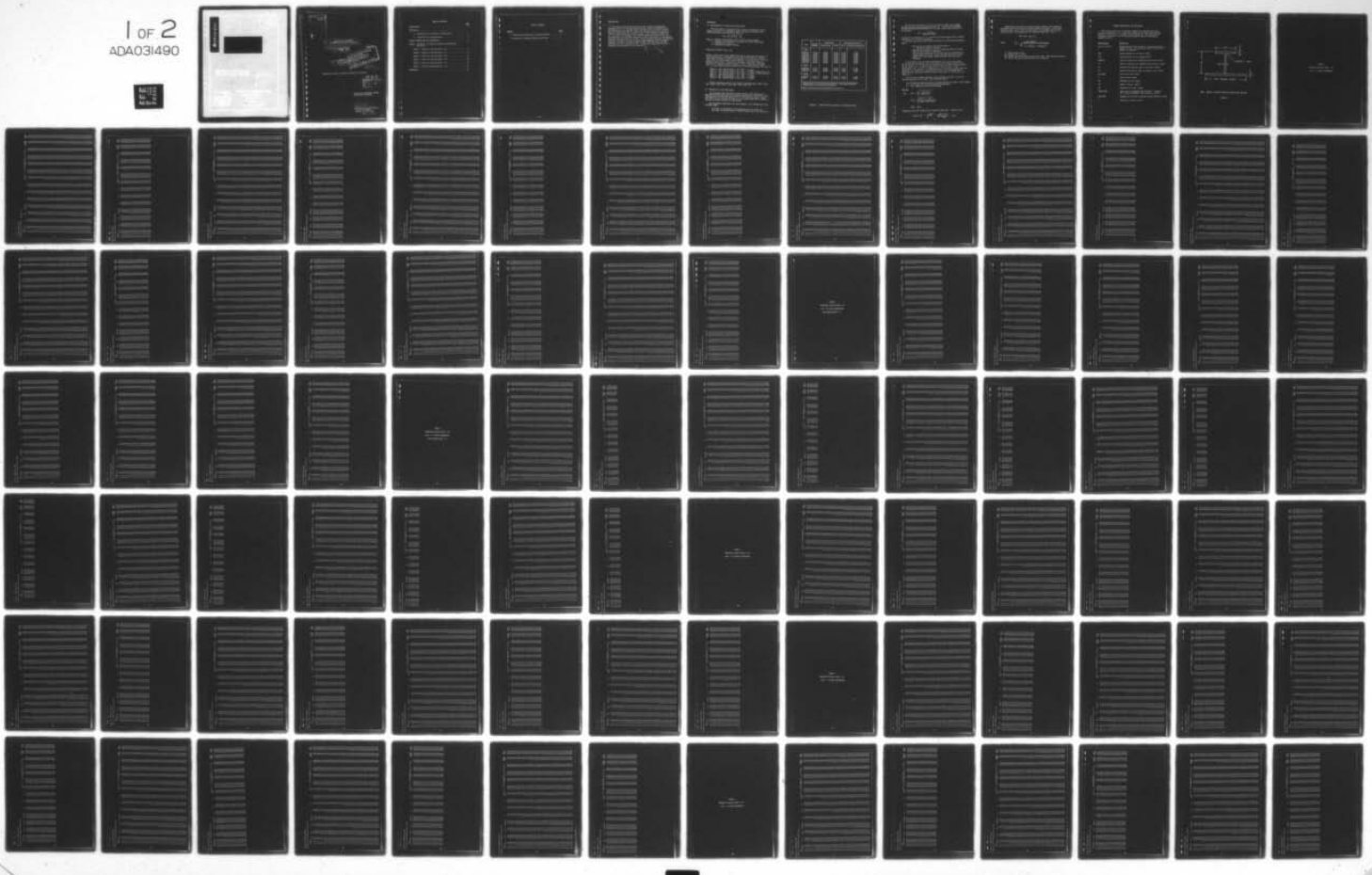
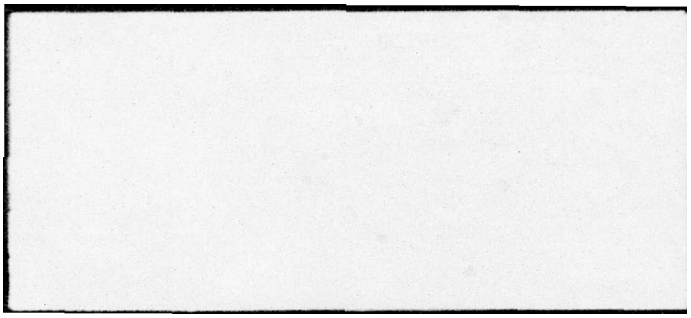
AD-A031 490 NAVAL SHIP ENGINEERING CENTER HYATTSVILLE MD F/G 11/6
PROPERTIES OF COMBINED ALUMINUM TEE EXTRUSION AND PLATE,(U)
AUG 76 P WITHERELL, E ARONNE
UNCLASSIFIED NAVSEC-6114-142-76 NL

1 OF 2
ADA031490





PROPERTIES OF COMBINED ALUMINUM TEE EXTRUSION AND PLATE

NAVSEC-6114-142-76
August 1976

Prepared by:
Peter Witherell
Eugene Aronne

101 p.

Approved for public release; distribution unlimited

NAVAL SHIP ENGINEERING CENTER
HYATTSVILLE, MARYLAND

Robert S. Johnson
Branch Head, SEC 6114

401 499

copy

TABLE OF CONTENTS

LIST OF FIGURES

INTRODUCTION

The design information contained in this report was developed primarily for use in the SES Design Computer Program of NAVSEC 6114P1. Its publication as a separate report provides ship structural designers with tabulated properties for small non-standard aluminum T extrusions acting in combination with aluminum plate. The T extrusions range from .5 - 9.5 lb/ft and plating is in standard thicknesses from 1/8" to 1". The extrusions are designed primarily for use as stiffeners in lightweight aluminum structures such as the SES. Since stiffener spacings are typically less than the '35t' effective plating width normally used for design in aluminum, the report includes tables for 8t, 10t, 12t, 14t, and 16t effective widths in addition to 35t. Criteria for proportions of the T extrusions are presented in the discussion.

DISCUSSION

A. Determination of Effective Plating Width

When the plate is considered to be acting in combination with a T-beam, selection of an effective width of plating is based on the following formula from DDS 1100-3 (Ref. 3).

$$b_{eff} = \left(2\sqrt{E/\sigma_y} \right) t$$

Where E = modulus of elasticity (10.3×10^6 psi for aluminum)
σ_y = tensile yield strength (33,000 psi for 5456 - H117 prime material, see Figure 1)
t = thickness of plate in inches

Using this formula, $b_{eff} = 35t$.

However, this formula only applies when 35t is less than the spacing of the aluminum beams. Consequently this report incorporates 6 tables using effective plating widths corresponding to 35t and also to specific cases where effective width is less than 35t. In Tables 2 and 3, a maximum flange width is specified to eliminate beams which would give less than 4" clearance between flanges. The 4" clearance is assumed to be an approximate minimum clearance for fabrication purposes (See Ref. 5)

Table 1: Eff. Plating Width = 35t, 1/8" - 1" plate
Table 2: Eff. Plating Width = 8", 1/4" - 1" plate, flange width $\leq$ 4"
Table 3: Eff. Plating Width = 10", 5/16" - 1" plate, flange width $\leq$ 6"
Table 4: Eff. Plating Width = 12", 3/8" - 1" plate
Table 5: Eff. Plating Width = 14", 7/16" - 1" plate
Table 6: Eff. Plating Width = 16", 1/2" - 1" plate

Plating thickness used are for standard aluminum plate (1/8", 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 5/8", 3/4", 7/8", 1").

B. Proportions of Tee Extrusions

In accordance with structural design practice, the dimensions of the extruded Tees presented here have been proportioned to preclude local buckling of the flange and web for 5456 - H111 aluminum shapes. Since this alloy has the highest strength of the extruded materials in Figure 1, it gives the most conservative proportions.

The following limitations have been imposed on the dimensions of the extruded beams:

- The ratio of web depth to web thickness does not exceed 43.
- The ratio of flange width to flange thickness does not exceed 20.

Alloy	Ultimate Strength	Yield Strength		Allowable Working Stress[1]	
		Prime Material	Welded	Shear	Tension and Compression
Plate:					
5052-H34	34,000	26,000	20,000	10,000	16,000
5086-H32	40,000	28,000	22,000	11,000	18,000
5086-H116	40,000	28,000	22,000	11,000	18,000
5086-H117	40,000	28,000	22,000	11,000	18,000
5454-H34	39,000	29,000	16,000	8,000	14,000
5456-H321	46,000	33,000	26,000	13,000	21,000
5456-H116	46,000	33,000	26,000	13,000	21,000
5456-H117	46,000	33,000	26,000	13,000	21,000
Shapes					
5086-H111	36,000	21,000	16,000	8,000	14,000
5454-H111	33,000	19,000	16,000	8,000	14,000
5456-H111	42,000	26,000	21,000	10,000	17,000
Tubing					
5086-H32	40,000	28,000	22,000	11,000	18,000
5086-0	35,000	14,000	14,000	8,000	13,000

[1]These values should be checked against section 9110-0-a of the General Specifications for Ships of the U.S. Navy or the detail specifications. These values are not to be used for compressive loads when stability controls.

NOTE: Modulus of elasticity (Young's modulus) 10,300,000 p.s.i.

Figure 1. Specification Properties of Aluminum Alloys.

The web b/t restriction is based on criteria taken from A Guide for the Analysis of Ship Structures (Ref. 4). A theoretical solution of critical compressive stress in the elastic region can be presented in the form

$$\sigma_c = \frac{K_c \pi^2 E}{12(1-\mu^2)(b/t)^2}$$

in which the coefficient K_c is a function of plate aspect ratio, loading conditions, and boundary conditions.

To define K_c for our web buckling problem, the following assumptions apply:

- The web has an aspect ratio greater than 2. (generally long and slender)
- The loading condition, used as a limiting case for design, will be uniform edge compression.
- The boundary conditions for the web will be represented as simply supported at the flange and partially fixed at the plate due to the weaker welded material along the plate boundary.

In accordance with the above assumptions, $K_c = 5.2$ is used here. If the web were considered to be fully fixed at the plate we would have $K_c = 5.5$ (Ref. 4). If the web were considered to be only simply supported at the plate, $K_c = 4.0$ (Ref. 3 and Ref. 4). The use of $K_c = 5.2$ represents a 20% reduction in fixity going from a fixed to simply supported boundary, as a result of welded yield for 5456 - H111 aluminum shapes being 20% less than prime material yield (21,000 psi vs. 26,000 psi, see Figure 1)

To solve the critical buckling stress equation for b/t, we use the following properties for 5456 - H111 aluminum shapes:

σ_c = 26,000 psi (yield strength of prime material for 5456 - H111 shapes).
E = 10.3×10^6 psi (elastic modulus for aluminum).
μ = .33 (Poisson's ratio for aluminum).

Solving:

web $$b/t = \sqrt{\frac{\pi^2 E K_c}{12(1-\mu^2)\sigma_c}}$$

$$b/t = \sqrt{\frac{\pi^2(10.3 \times 10^6)\ 5.2}{12(1-.33^2)\ 26000}}$$

$$b/t = 43.6$$

Proportions for the flange b/t are given by DDS 1100 - 3 (Ref. 3) as:

$$\text{flange } b/t = \sqrt{E/Fy} = \sqrt{\frac{10.3 \times 10^6}{26000}} = 19.9$$

Permissible beam spans to prevent flange tripping vary, depending on flange width and the ratio of flange width/beam depth. In the last column of each of the tables in this report, the maximum span is given for each beam. The maximum span is defined by DDS 1100 - 3 as :

$$\text{max. span} = K_8 \times b_F$$

where

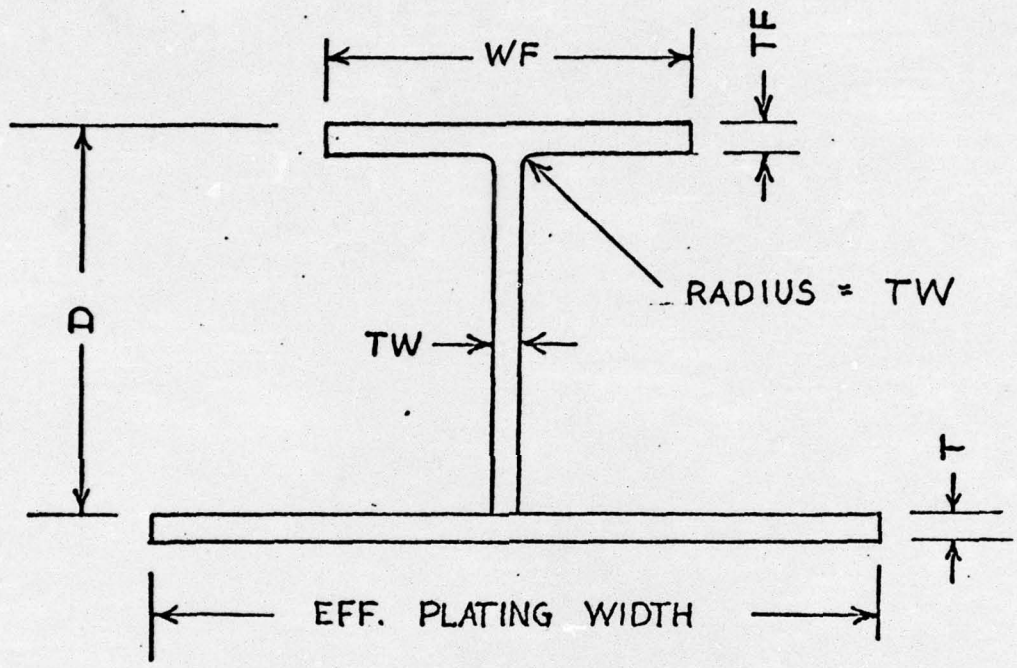
$$K_8 = \frac{1.283\sqrt{E/Fy}}{\sqrt{1 + .2(d/b_F) - .128(b_F/d)^2}}$$

d = beam depth, inches
b_F = flange width, inches
Fy = 26,000 psi (prime material yield for 5456 - H111 aluminum shapes).
E = 10.3×10^6 psi (elastic modulus for aluminum).

SYMBOL NOMENCLATURE AND DEFINITION

The section properties of combined aluminum Tee extrusion and plate are given in Tables 1 - 6. These tables apply to the case where the plate acts as a flange for the attached Tee (see Figure 2). For each plating thickness in Tables 1 - 6, the Tees are listed in order of increasing weight (lb./ft.).

Nomenclature	Definition
Nom. D x lb./ft.	Nominal depth of Tee rounded up to nearest inch and weight (lb./ft.) for Tee alone, based on 169 lb./ft.^{3} density of aluminum
ZPL	Section modulus to the plate, inch^3
ZFL	Section modulus to the flange, inch^3
INERTIA	Moment of inertia for combined Tee and plate, inch^4
R	Radius of gyration for combined Tee and plate, inches
YP	Distance from neutral axis to the plate, inches
YF	Distance from neutral axis to flange of Tee, inches
Tee AREA	Area of Tee only, inch^2
D	Depth of Tee, inches
TW	Thickness of web, inches
WF	Width of flange, inches
TF	Thickness of flange, inches
SHEAR AREA	Shear area of combined beam and plate = (depth of Tee + plate thickness) x web thickness, inches^2
MAX SPAN	Maximum span for Tee to prevent flange tripping, inches
T	Thickness of plate, inches



NOTE: BEAM WT. INCLUDES RADIUS BETWEEN FLANGE AND WEB.

Figure 2.

TABLE 1

EFFECTIVE PLATING WIDTH = 35t

1/8" - 1" PLATE THICKNESSES

35T EFFECTIVE WIDTH

.125 IN. PLATE (AREA= .55 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	.73	.41	.42	.60	.58	1.04	.43	1.500	.125	2.000	.125	.20	53.2
2 X .58	1.01	.58	.78	.87	.77	1.35	.49	2.000	.125	2.000	.125	.27	49.3
3 X .65	1.29	.76	1.20	1.07	.97	1.65	.55	2.500	.125	2.000	.125	.33	47.3
3 X .72	1.59	.96	1.87	1.27	1.18	1.95	.62	3.000	.125	2.000	.125	.39	45.8
3 X .72	1.33	.90	1.41	1.10	1.06	1.57	.62	2.500	.125	2.500	.125	.33	61.7
3 X .80	1.63	1.12	2.08	1.30	1.27	1.85	.68	3.000	.125	2.500	.125	.39	59.5
4 X .87	1.94	1.36	2.90	1.20	1.49	2.13	.74	3.500	.125	2.500	.125	.45	57.9
4 X .94	2.26	1.61	3.88	1.70	1.71	2.41	.80	4.000	.125	2.500	.125	.52	56.6
5 X 1.02	2.59	1.87	5.03	1.89	1.94	2.69	.87	4.500	.125	2.500	.125	.58	55.6
5 X 1.09	2.93	2.14	6.34	2.07	2.16	2.96	.93	5.000	.125	2.500	.125	.64	54.6
4 X 1.13	2.37	2.15	4.65	1.75	1.96	2.16	.97	4.000	.125	3.000	.160	.52	70.1
6 X 1.16	3.28	2.43	7.85	2.26	2.39	3.23	.99	5.500	.125	2.500	.125	.70	53.7
5 X 1.21	2.72	2.48	5.99	1.95	2.21	2.42	1.03	4.500	.125	3.000	.160	.58	60.7
5 X 1.28	3.08	2.82	7.24	2.14	2.45	2.68	1.09	5.000	.125	3.000	.160	.64	67.5
6 X 1.35	3.45	3.16	9.28	2.34	2.69	2.93	1.15	5.500	.125	3.000	.160	.70	60.5
4 X 1.60	2.49	3.39	5.92	1.70	2.38	1.75	1.36	4.000	.125	4.000	.220	.52	98.7
5 X 1.67	2.86	3.88	7.62	1.97	2.06	1.96	1.42	4.500	.125	4.000	.220	.58	96.4
6 X 1.67	4.01	3.72	11.82	2.45	2.35	3.18	1.43	6.000	.160	3.000	.160	.98	65.5
5 X 1.74	3.25	4.37	9.56	2.17	2.94	2.19	1.48	5.000	.125	4.000	.220	.64	94.5
7 X 1.77	4.43	4.13	14.10	2.63	3.19	3.43	1.51	6.500	.160	3.000	.160	1.06	64.6
6 X 1.82	3.66	4.58	11.76	2.37	3.22	2.41	1.55	5.500	.125	4.000	.220	.70	93.0
7 X 1.86	4.87	4.55	16.76	2.80	3.44	3.69	1.59	7.000	.160	3.000	.160	1.14	63.8
6 X 1.88	4.17	4.57	13.35	2.49	3.20	2.92	1.61	6.000	.160	3.500	.190	.98	78.4
7 X 1.98	4.61	5.04	15.96	2.67	3.46	3.16	1.69	6.500	.160	3.500	.190	1.06	77.4
7 X 2.07	5.07	5.53	18.85	2.86	3.72	3.41	1.77	7.000	.160	3.500	.190	1.14	76.4
6 X 2.13	4.29	5.54	14.81	2.50	3.45	2.67	1.82	6.000	.160	4.000	.220	.98	91.6
7 X 2.22	4.76	6.10	17.70	2.69	3.72	2.90	1.90	6.500	.160	4.000	.220	1.06	90.4
7 X 2.32	5.24	6.66	20.69	2.88	3.99	3.14	1.98	7.000	.160	4.000	.220	1.14	89.3
8 X 2.56	4.44	7.20	16.81	2.48	3.79	2.34	2.18	6.000	.160	5.000	.250	.98	119.0
7 X 2.65	4.93	7.89	20.09	2.67	4.08	2.55	2.26	6.500	.160	5.000	.250	1.06	117.3
7 X 2.75	5.43	8.60	23.71	2.87	4.37	2.76	2.34	7.000	.160	5.000	.250	1.14	115.8
8 X 3.10	6.27	9.49	26.80	3.00	4.59	3.03	2.64	7.500	.190	5.000	.250	1.45	114.5
8 X 3.21	6.85	10.25	33.37	3.19	4.87	3.25	2.74	8.000	.190	5.000	.250	1.54	113.3
8 X 3.28	4.56	9.81	19.07	2.39	4.18	1.94	2.80	6.000	.160	5.000	.313	.98	148.0
7 X 3.56	5.07	10.75	22.83	2.58	4.50	2.12	2.88	6.500	.160	6.000	.313	1.06	145.6
7 X 3.47	5.60	11.69	26.99	2.77	4.82	2.31	2.96	7.000	.160	6.000	.313	1.14	143.5
8 X 3.82	6.51	12.77	32.89	2.94	5.05	2.58	3.26	7.500	.190	6.000	.313	1.45	141.8
8 X 3.94	7.13	13.76	38.15	3.13	5.35	2.77	3.35	8.000	.190	6.000	.313	1.54	140.2
9 X 4.34	8.21	14.96	45.72	3.28	5.57	3.06	3.70	8.500	.220	6.000	.313	1.90	138.7
9 X 4.47	8.91	16.01	52.25	3.46	5.86	3.26	3.81	9.000	.220	6.000	.313	2.01	137.4
10 X 4.60	9.64	17.08	59.30	3.64	6.15	3.47	3.92	9.500	.220	6.000	.313	2.12	136.2
9 X 4.76	8.33	16.93	48.13	3.23	5.78	2.84	4.06	8.500	.220	6.000	.375	1.90	138.7
9 X 4.89	9.05	18.11	55.06	3.42	6.08	3.04	4.17	9.000	.220	6.000	.375	2.01	137.4
10 X 5.02	9.79	19.31	62.54	3.60	6.39	3.24	4.28	9.500	.220	6.000	.375	2.12	136.2
9 X 5.42	8.51	20.24	51.07	3.10	6.07	2.55	4.62	8.500	.220	7.500	.375	1.90	180.4
10 X 5.50	11.18	20.82	73.66	3.75	6.59	3.54	4.68	10.000	.250	6.000	.375	2.53	135.0
9 X 5.55	9.26	21.62	59.14	3.35	6.39	2.74	4.73	9.000	.220	7.500	.375	2.01	178.5
11 X 5.54	12.03	22.09	82.77	3.93	6.68	3.75	4.61	10.500	.250	6.000	.375	2.66	134.0
10 X 5.68	10.03	23.03	67.23	3.53	6.71	2.92	4.84	9.500	.220	7.500	.375	2.12	176.8
11 X 5.79	12.91	23.38	92.52	4.11	7.17	3.96	4.93	11.000	.250	6.000	.375	2.78	132.9

35T EFFECTIVE WIDTH

.125 IN. PLATE (AREA= .55 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	11.33	23.09	76.97	3.71	6.79	3.33	5.05	10.000	.250	5.000	.438	2.53	135.0
11 X 6.07	12.20	24.49	86.54	3.89	7.09	3.53	5.17	10.500	.250	5.000	.438	2.66	134.0
10 X 6.16	11.48	24.72	79.36	3.70	6.91	3.21	5.25	10.000	.250	7.500	.375	2.53	175.2
11 X 6.21	13.10	25.91	90.79	4.07	7.39	3.74	5.30	11.000	.250	5.000	.438	2.78	132.9
11 X 6.30	12.36	26.19	89.21	3.88	7.22	3.41	5.37	10.500	.250	7.500	.375	2.66	173.8
11 X 6.45	13.27	27.68	99.77	4.06	7.52	3.60	5.50	11.000	.250	7.500	.375	2.78	172.4
12 X 7.38	16.86	29.83	130.33	4.37	7.76	4.37	6.29	12.000	.313	6.000	.438	3.80	131.0
13 X 7.56	17.92	31.42	144.07	4.54	8.04	4.59	6.45	12.500	.313	6.000	.438	3.95	130.1
12 X 7.62	17.04	31.74	134.43	4.37	7.89	4.24	6.49	12.000	.313	7.500	.375	3.80	169.9
13 X 7.80	18.17	33.40	148.58	4.54	8.18	4.45	6.65	12.500	.313	7.500	.375	3.95	168.8
13 X 7.98	18.18	34.14	149.74	4.52	8.24	4.39	6.80	12.500	.313	8.000	.500	3.95	130.1
13 X 7.99	19.34	35.08	163.60	4.72	8.46	4.66	6.81	13.000	.313	7.500	.375	4.11	167.7
13 X 8.16	19.35	35.87	164.96	4.69	8.53	4.60	6.95	13.000	.313	8.000	.500	4.11	129.2
14 X 8.17	20.53	36.78	179.52	4.89	8.74	4.88	6.90	13.500	.313	7.500	.375	4.26	166.7
14 X 8.35	20.55	37.63	181.10	4.86	8.81	4.81	7.11	13.500	.313	8.000	.500	4.26	128.4
12 X 8.41	17.40	38.90	143.69	4.32	8.23	3.89	7.16	12.000	.313	8.000	.438	3.80	183.2
13 X 8.59	18.63	38.79	158.90	4.49	8.53	4.10	7.32	12.500	.313	8.000	.438	3.95	182.0
13 X 8.78	19.84	40.71	175.06	4.67	8.82	4.30	7.48	13.000	.313	8.000	.438	4.11	180.8
14 X 8.96	21.08	42.65	192.16	4.85	9.12	4.51	7.63	13.500	.313	8.000	.438	4.26	179.7
12 X 8.97	17.86	40.32	148.93	4.26	8.43	3.89	7.64	12.000	.313	8.000	.500	3.80	183.2
13 X 9.15	18.86	42.38	164.79	4.44	8.74	4.09	7.80	12.500	.313	8.000	.500	3.95	182.0
13 X 9.34	20.09	44.47	181.64	4.62	9.04	4.08	7.95	13.000	.313	8.000	.500	4.11	180.8
14 X 9.52	21.35	46.58	199.49	4.80	9.34	4.28	8.11	13.500	.313	8.000	.500	4.26	179.7

35T EFFECTIVE WIDTH

.188 IN. PLATE (AREA= 1.23 SQ. IN.)

NUM. J	X	LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.50	1.37	.43	.96	.58	.41	1.28	.43	1.500	.125	2.000	.125	.21	53.2
2	X	.58	1.92	.62	1.02	.77	.53	1.06	.49	2.000	.125	2.000	.125	.27	49.3
3	X	.65	2.49	.82	1.65	.96	.66	2.02	.55	2.500	.125	2.000	.125	.34	47.3
3	X	.72	3.05	1.03	2.46	1.15	.80	2.38	.62	3.000	.125	2.000	.125	.40	45.8
3	X	.72	2.58	.96	1.88	1.01	.73	1.96	.62	2.500	.125	2.500	.125	.34	61.7
3	X	.80	3.16	1.21	2.78	1.21	.88	2.31	.68	3.000	.125	2.500	.125	.40	59.5
4	X	.87	3.74	1.47	3.88	1.40	1.04	2.65	.74	3.500	.125	2.500	.125	.46	57.9
4	X	.94	4.33	1.74	5.20	1.60	1.20	2.99	.80	4.000	.125	2.500	.125	.52	56.6
5	X	1.02	4.93	2.03	6.74	1.79	1.37	3.32	.87	4.500	.125	2.500	.125	.59	55.6
5	X	1.09	5.53	2.33	8.51	1.99	1.54	3.65	.93	5.000	.125	2.500	.125	.65	54.6
4	X	1.13	4.56	2.36	6.45	1.71	1.41	2.77	.97	4.000	.125	3.000	.160	.52	70.1
6	X	1.16	6.13	2.65	10.53	2.18	1.72	3.47	.99	5.500	.125	2.500	.125	.71	53.7
5	X	1.21	5.16	2.69	8.36	1.92	1.60	3.09	1.03	4.500	.125	3.000	.160	.59	68.7
5	X	1.26	5.82	3.06	10.41	2.12	1.79	3.40	1.09	5.000	.125	3.000	.160	.65	67.5
6	X	1.35	6.45	3.45	12.79	2.32	1.98	3.70	1.15	5.500	.125	3.000	.160	.71	66.5
4	X	1.66	4.82	3.68	8.75	1.84	1.81	2.37	1.36	4.000	.125	4.000	.220	.52	98.7
5	X	1.67	5.49	4.22	11.19	2.05	2.04	2.65	1.42	4.500	.125	4.000	.220	.59	96.4
6	X	1.67	7.20	4.12	16.21	2.47	2.25	3.94	1.43	6.000	.160	3.000	.160	.99	65.5
5	X	1.74	6.17	4.77	13.96	2.27	2.26	2.93	1.48	5.000	.125	4.000	.220	.65	94.5
7	X	1.77	7.88	4.58	19.30	2.66	2.46	4.23	1.51	6.500	.160	3.000	.160	1.07	64.6
6	X	1.82	6.86	5.33	17.06	2.48	2.49	3.20	1.55	5.500	.125	4.000	.220	.71	93.0
7	X	1.86	8.57	5.45	22.85	2.85	2.67	4.52	1.59	7.000	.160	3.000	.160	1.15	63.8
6	X	1.88	7.48	5.05	18.65	2.56	2.49	3.69	1.61	6.000	.160	3.500	.190	.99	78.4
7	X	1.98	8.19	5.56	22.20	2.76	2.71	3.98	1.69	6.500	.160	3.500	.190	1.07	77.4
7	X	2.07	8.91	6.13	26.11	2.95	2.93	4.26	1.77	7.000	.160	3.500	.190	1.15	76.4
6	X	2.13	7.71	6.12	21.10	2.63	2.74	3.45	1.82	6.000	.160	4.000	.220	.99	91.6
7	X	2.22	8.44	6.74	25.06	2.83	2.97	3.72	1.90	6.500	.160	4.000	.220	1.07	90.4
7	X	2.32	9.19	7.38	29.41	3.03	3.20	3.99	1.98	7.000	.160	4.000	.220	1.15	89.3
6	X	2.36	7.97	7.95	24.63	2.69	3.09	3.10	2.18	6.000	.160	5.000	.250	.99	119.0
7	X	2.65	8.74	8.73	29.20	2.89	3.34	3.35	2.20	6.500	.160	5.000	.250	1.07	117.3
7	X	2.75	9.52	9.52	34.22	3.10	3.59	3.60	2.34	7.000	.160	5.000	.250	1.15	115.8
8	X	3.10	10.58	10.56	40.62	3.24	3.84	3.85	2.64	7.500	.190	5.000	.250	1.46	114.5
8	X	3.21	11.42	11.41	46.75	3.43	4.09	4.10	2.74	8.000	.190	5.000	.250	1.56	113.3
6	X	3.28	8.19	10.91	28.95	2.68	3.53	2.65	2.80	6.000	.160	6.000	.313	.99	148.0
7	X	3.38	9.00	11.95	34.33	2.89	3.81	2.87	2.88	6.500	.160	6.000	.313	1.07	145.6
7	X	3.47	9.83	12.99	40.22	3.10	4.09	3.10	2.96	7.000	.160	6.000	.313	1.15	143.5
8	X	3.82	10.97	14.23	47.61	3.26	4.34	3.35	3.26	7.500	.190	6.000	.313	1.46	141.8
8	X	3.94	11.87	15.63	54.70	3.46	4.61	3.57	3.35	8.000	.190	6.000	.313	1.56	140.2
9	X	4.34	13.16	16.69	63.93	3.60	4.86	3.83	3.70	8.500	.220	6.000	.313	1.91	138.7
9	X	4.47	14.14	17.85	72.49	3.79	5.13	4.06	3.81	9.000	.220	6.000	.313	2.02	137.4
10	X	4.60	15.14	19.03	81.68	3.98	5.40	4.29	3.92	9.500	.220	6.000	.313	2.13	136.2
9	X	4.76	13.34	16.92	67.97	3.59	5.09	3.59	4.06	8.500	.220	6.000	.375	1.91	138.7
9	X	4.89	14.35	20.22	77.10	3.78	5.37	3.81	4.17	9.000	.220	6.000	.375	2.02	137.4
10	X	5.02	15.37	21.54	86.89	3.97	5.65	4.03	4.28	9.500	.220	6.000	.375	2.13	136.2
9	X	5.42	13.62	22.63	73.87	3.55	5.42	3.26	4.62	8.500	.220	7.500	.375	1.91	180.4
10	X	5.50	16.96	23.21	99.83	4.11	5.89	4.50	4.68	10.000	.250	6.000	.375	2.55	135.0
9	X	5.55	14.00	24.15	85.80	3.75	5.72	3.47	4.73	9.000	.220	7.500	.375	2.02	178.5
11	X	5.64	18.08	24.00	111.38	4.29	6.16	4.23	4.81	10.500	.250	6.000	.375	2.67	134.0
10	X	5.68	15.71	25.69	94.44	3.94	6.01	3.68	4.84	9.500	.220	7.500	.375	2.13	176.8
11	X	5.79	19.23	26.01	123.68	4.48	6.43	4.75	4.93	11.000	.250	6.000	.375	2.80	132.9

35T EFFECTIVE WIDTH

.188 IN. PLATE (AREA= 1.25 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	17.18	25.76	104.99	4.09	6.11	4.08	5.05	10.000	.250	6.000	.438	2.55	135.0
11 X 6.07	18.33	27.29	117.17	4.28	6.39	4.29	5.17	10.500	.250	6.000	.438	2.67	134.0
10 X 6.16	17.38	27.52	108.52	4.09	6.24	3.94	5.25	10.000	.250	7.500	.375	2.55	175.2
11 X 6.21	19.50	28.84	130.13	4.47	6.67	4.51	5.30	11.000	.250	6.000	.438	2.80	132.9
11 X 6.30	18.54	29.13	121.07	4.28	6.53	4.16	5.37	10.500	.250	7.500	.375	2.67	173.8
11 X 6.45	19.72	30.75	134.43	4.47	6.82	4.37	5.50	11.000	.250	7.500	.375	2.80	172.4
12 X 7.38	23.58	33.02	167.04	4.72	7.11	5.08	6.29	12.000	.313	6.000	.438	3.81	131.0
13 X 7.56	24.95	34.73	184.24	4.90	7.38	5.30	6.45	12.500	.313	6.000	.438	3.97	130.1
12 X 7.62	23.88	35.07	173.13	4.73	7.25	4.94	6.49	12.000	.313	7.500	.375	3.81	169.9
13 X 7.80	25.26	36.06	190.23	4.91	7.53	5.16	6.65	12.500	.313	7.500	.375	3.97	168.8
13 X 7.98	25.29	37.73	192.10	4.89	7.60	5.09	6.80	12.500	.313	6.000	.500	3.97	130.1
13 X 7.99	26.70	38.67	208.29	5.09	7.80	5.39	6.81	13.000	.313	7.500	.375	4.13	167.7
13 X 8.16	26.72	39.60	210.42	5.07	7.87	5.31	6.95	13.000	.313	6.000	.500	4.13	129.2
14 X 8.17	28.16	+0.50	227.34	5.27	8.07	5.61	6.96	13.500	.313	7.500	.375	4.28	166.7
14 X 8.35	28.19	+1.49	229.74	5.25	8.15	5.54	7.11	13.500	.313	6.000	.500	4.28	128.4
12 X 8.41	24.43	40.75	186.14	4.71	7.62	4.57	7.16	12.000	.313	8.000	.438	3.81	183.2
13 X 8.59	25.87	+2.79	204.56	4.89	7.91	4.78	7.32	12.500	.313	8.000	.438	3.97	182.0
13 X 8.78	27.35	+4.04	224.03	5.07	8.19	5.00	7.48	13.000	.313	8.000	.438	4.13	180.8
14 X 8.96	28.85	+0.92	244.55	5.25	8.48	5.21	7.63	13.500	.313	8.000	.438	4.28	179.7
12 X 8.97	24.70	+4.56	193.09	4.67	7.84	4.35	7.64	12.000	.313	8.000	.500	3.81	183.2
13 X 9.15	26.17	+6.77	212.93	4.86	8.14	4.55	7.80	12.500	.313	8.000	.500	3.97	182.0
13 X 9.34	27.68	49.00	233.26	5.04	8.43	4.76	7.95	13.000	.313	8.000	.500	4.13	180.8
14 X 9.52	29.21	51.26	254.70	5.22	8.72	4.97	8.11	13.500	.313	8.000	.500	4.28	179.7

35T EFFECTIVE WIDTH

.250 IN. PLATE (AREA= 2.19 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	1.96	.45	.64	.50	.33	1.42	.43	1.500	.125	2.000	.125	.22	53.2
2 X .58	2.26	.64	1.16	.66	.41	1.84	.49	2.000	.125	2.000	.125	.28	49.3
3 X .65	3.60	.85	1.90	.83	.50	2.25	.55	2.500	.125	2.000	.125	.34	47.3
3 X .72	4.74	1.07	2.84	1.01	.60	2.65	.62	3.000	.125	2.000	.125	.41	45.8
3 X .72	3.99	1.00	2.20	.89	.55	2.20	.62	2.500	.125	2.500	.125	.34	61.7
3 X .80	4.95	1.25	3.25	1.06	.66	2.59	.68	3.000	.125	2.500	.125	.41	59.5
4 X .87	5.92	1.52	4.55	1.25	.77	2.98	.74	3.500	.125	2.500	.125	.47	57.9
4 X .94	6.89	1.81	6.10	1.43	.89	3.36	.80	4.000	.125	2.500	.125	.53	56.6
5 X 1.02	7.86	2.12	7.93	1.61	1.01	3.74	.87	4.500	.125	2.500	.125	.59	55.6
5 X 1.09	8.84	2.44	10.04	1.79	1.14	4.11	.93	5.000	.125	2.500	.125	.66	54.6
4 X 1.13	7.34	2.42	7.74	1.67	1.05	3.20	.97	4.000	.125	3.000	.160	.53	70.1
6 X 1.16	9.81	2.78	12.45	1.98	1.27	4.48	.99	5.000	.125	2.500	.125	.72	53.7
5 X 1.21	8.36	2.80	9.97	1.76	1.19	3.56	1.03	4.500	.125	3.000	.160	.59	68.7
5 X 1.26	9.36	3.20	12.52	1.95	1.34	3.91	1.09	5.000	.125	3.000	.160	.66	67.5
5 X 1.35	10.40	3.61	15.41	2.15	1.48	4.27	1.15	5.500	.125	3.000	.160	.72	66.5
4 X 1.60	7.89	3.64	10.98	1.76	1.39	2.86	1.36	4.000	.125	4.000	.220	.53	96.7
5 X 1.67	8.97	4.41	14.04	1.97	1.56	3.19	1.42	4.500	.125	4.000	.220	.59	96.4
6 X 1.67	11.44	4.35	19.69	2.33	1.72	4.53	1.43	6.000	.160	3.000	.160	1.00	65.5
5 X 1.74	10.06	4.98	17.50	2.18	1.74	3.51	1.48	5.000	.125	4.000	.220	.66	94.5
7 X 1.77	12.49	4.84	28.55	2.53	1.89	4.66	1.51	6.500	.160	3.000	.160	1.08	64.6
6 X 1.82	11.16	5.58	21.58	2.39	1.92	3.83	1.55	5.500	.125	4.000	.220	.72	93.0
7 X 1.80	13.54	5.56	27.83	2.72	2.06	5.19	1.59	7.000	.160	3.000	.160	1.16	83.8
5 X 1.86	11.92	5.33	23.01	2.46	1.93	4.32	1.61	6.000	.160	3.500	.190	1.00	78.4
7 X 1.98	13.01	5.90	27.40	2.66	2.11	4.84	1.69	6.500	.160	3.500	.190	1.08	77.4
7 X 2.07	14.10	6.49	32.23	2.86	2.29	4.96	1.77	7.000	.160	3.500	.190	1.16	76.4
6 X 2.13	12.31	6.45	26.46	2.57	2.15	4.10	1.82	6.000	.160	4.000	.220	1.00	91.6
7 X 2.22	13.43	7.12	31.41	2.77	2.34	4.41	1.90	6.500	.160	4.000	.220	1.08	90.4
7 X 2.32	14.56	7.81	36.85	2.97	2.53	4.72	1.98	7.000	.160	4.000	.220	1.16	89.3
8 X 2.56	12.77	8.40	31.06	2.69	2.48	3.77	2.18	6.000	.160	5.000	.250	1.00	119.0
7 X 2.65	13.94	9.23	37.47	2.90	2.69	4.00	2.26	6.500	.160	5.000	.250	1.08	117.3
7 X 2.75	15.12	10.07	43.83	3.11	2.90	4.35	2.34	7.000	.160	5.000	.250	1.16	115.8
8 X 3.10	16.47	11.25	51.81	3.27	3.14	4.61	2.64	7.500	.190	5.000	.250	1.47	114.5
8 X 3.21	17.70	12.17	59.51	3.48	3.36	4.89	2.74	8.000	.190	5.000	.250	1.57	113.3
6 X 3.28	13.18	11.56	38.48	2.78	2.92	3.33	2.80	6.000	.160	5.000	.313	1.00	148.0
7 X 3.36	14.40	12.66	45.48	3.00	3.16	3.59	2.86	6.500	.160	6.000	.313	1.08	145.6
7 X 3.47	15.64	13.78	53.11	3.21	3.40	3.85	2.96	7.000	.160	6.000	.313	1.16	143.5
8 X 3.62	17.11	15.17	62.31	3.38	3.64	4.11	3.26	7.500	.190	6.000	.313	1.47	141.8
8 X 3.94	18.40	16.36	71.44	3.59	3.88	4.37	3.35	8.000	.190	6.000	.313	1.57	140.2
9 X 4.34	20.01	17.89	82.65	3.75	4.13	4.62	3.70	8.500	.220	6.000	.313	1.93	138.7
9 X 4.47	21.37	19.15	93.43	3.95	4.37	4.88	3.81	9.000	.220	6.000	.313	2.04	137.4
10 X 4.60	22.75	20.43	104.97	4.15	4.61	5.14	3.92	9.500	.220	6.000	.313	2.15	136.2
9 X 4.70	20.29	20.31	88.81	3.77	4.38	4.37	4.06	8.500	.220	6.000	.375	1.93	138.7
9 X 4.89	21.69	21.72	100.37	3.97	4.63	4.62	4.17	9.000	.220	6.000	.375	2.04	137.4
10 X 5.02	23.10	23.15	112.73	4.16	4.86	4.87	4.28	9.500	.220	6.000	.375	2.15	136.2
9 X 5.42	20.71	24.30	97.84	3.79	4.72	4.03	4.62	8.500	.220	7.500	.375	1.93	180.4
10 X 5.50	24.96	25.02	126.13	4.32	5.13	5.12	4.68	10.000	.250	6.000	.375	2.56	135.0
9 X 5.55	22.15	25.95	110.53	4.00	4.99	4.26	4.73	9.000	.220	7.500	.375	2.04	178.5
11 X 5.84	26.49	26.53	142.47	4.51	5.38	5.37	4.81	10.500	.250	6.000	.375	2.69	134.0
10 X 5.88	23.61	27.61	124.08	4.20	5.26	4.49	4.84	9.500	.220	7.500	.375	2.15	176.8
11 X 5.79	28.01	28.06	157.70	4.71	5.63	5.62	4.93	11.000	.250	6.000	.375	2.81	132.9

35T EFFECTIVE WIDTH

.250 IN. PLATE (AREA= 2.13 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	25.30	27.79	135.76	4.33	5.37	4.88	5.05	10.000	.250	5.000	.438	2.56	135.0
11 X 6.07	26.84	29.45	150.95	4.53	5.62	5.13	5.17	10.500	.250	5.000	.438	2.69	134.0
10 X 6.16	25.58	29.66	140.78	4.35	5.50	4.75	5.25	10.000	.250	7.500	.375	2.56	175.2
11 X 6.21	28.39	31.13	167.05	4.72	5.88	5.37	5.30	11.000	.250	5.000	.438	2.81	132.9
11 X 6.50	27.13	31.39	150.46	4.55	5.77	4.98	5.37	10.500	.250	7.500	.375	2.69	173.8
11 X 6.45	28.71	33.15	173.07	4.75	6.03	5.22	5.50	11.000	.250	7.500	.375	2.81	172.4
12 X 7.38	33.01	35.75	210.26	4.98	6.37	5.68	6.29	12.000	.313	6.000	.438	3.83	131.0
13 X 7.36	34.76	37.60	230.31	5.17	6.63	6.12	6.45	12.500	.313	6.000	.438	3.99	130.1
12 X 7.62	33.41	37.92	217.60	5.01	6.51	5.74	6.49	12.000	.313	7.500	.375	3.83	169.9
13 X 7.60	35.18	39.86	238.25	5.19	6.77	5.98	6.65	12.500	.313	7.500	.375	3.99	166.8
13 X 7.90	35.21	40.06	241.12	5.18	6.85	5.90	6.80	12.500	.313	8.000	.500	3.99	130.1
13 X 7.99	38.98	41.81	268.00	5.38	7.05	6.22	6.81	13.000	.313	7.500	.375	4.15	167.7
13 X 8.10	37.02	42.07	265.20	5.37	7.11	6.14	6.95	13.000	.313	8.000	.500	4.15	129.2
14 X 8.17	38.80	43.79	282.87	5.56	7.29	6.46	6.96	13.500	.313	7.500	.375	4.30	166.7
14 X 8.35	38.85	44.91	288.42	5.55	7.37	6.38	7.11	13.500	.313	8.000	.500	4.30	128.4
12 X 8.41	34.15	44.07	235.71	5.02	6.90	5.35	7.16	12.000	.313	8.000	.438	3.83	183.2
13 X 8.59	35.98	46.26	256.03	5.21	7.17	5.58	7.32	12.500	.313	8.000	.438	3.99	182.0
13 X 8.78	37.83	48.47	281.54	5.40	7.44	5.81	7.48	13.000	.313	8.000	.438	4.15	180.8
14 X 8.96	39.72	50.71	306.24	5.58	7.71	6.04	7.63	13.500	.313	8.000	.438	4.30	179.7
12 X 8.97	34.52	48.23	240.47	5.01	7.14	5.11	7.64	12.000	.313	8.000	.500	3.83	183.2
13 X 9.15	36.38	50.60	269.85	5.20	7.42	5.33	7.80	12.500	.313	8.000	.500	3.99	182.0
13 X 9.34	38.27	52.99	294.46	5.39	7.69	5.56	7.95	13.000	.313	8.000	.500	4.15	180.8
14 X 9.52	40.19	55.41	320.31	5.58	7.97	5.78	8.11	13.500	.313	8.000	.500	4.30	179.7

35T EFFECTIVE WIDTH

.313 IN. PLATE (AREA= 3.42 SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.38	.47	.71	.43	.30	1.51	.43	1.500	.125	2.000	.125	.23	53.2
2 X .56	3.62	.66	1.29	.57	.36	1.96	.49	2.000	.125	2.000	.125	.29	49.3
3 X .65	4.95	.87	2.08	.72	.42	2.39	.55	2.500	.125	2.000	.125	.35	47.3
3 X .72	6.33	1.10	3.10	.88	.49	2.82	.62	3.000	.125	2.000	.125	.41	45.8
3 X .72	5.29	1.02	2.41	.77	.46	2.56	.62	2.500	.125	2.500	.125	.35	61.7
3 X .80	6.71	1.28	3.57	.93	.53	2.78	.68	3.000	.125	2.500	.125	.41	59.5
4 X .87	8.14	1.56	5.00	1.10	.61	3.20	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	9.59	1.86	6.72	1.26	.70	3.61	.80	4.000	.125	2.500	.125	.54	56.6
5 X 1.02	11.05	2.17	8.74	1.43	.79	4.02	.87	4.500	.125	2.500	.125	.60	55.6
5 X 1.09	12.51	2.51	11.10	1.60	.89	4.43	.93	5.000	.125	2.500	.125	.66	54.6
4 X 1.13	10.40	2.48	8.04	1.40	.83	3.68	.97	4.000	.125	3.000	.160	.54	70.1
5 X 1.16	13.97	2.86	13.79	1.77	.99	4.83	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	11.92	2.87	11.15	1.58	.94	3.88	1.03	4.500	.125	3.000	.160	.60	68.7
5 X 1.28	13.44	3.28	14.02	1.70	1.04	4.27	1.09	5.000	.125	3.000	.160	.66	67.5
5 X 1.35	14.95	3.71	17.28	1.94	1.16	4.66	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.50	11.45	3.94	12.65	1.63	1.11	3.21	1.36	4.000	.125	4.000	.220	.54	98.7
5 X 1.67	13.06	4.52	16.17	1.83	1.24	3.67	1.42	4.500	.125	4.000	.220	.60	96.4
6 X 1.67	16.45	4.49	22.28	2.14	1.35	4.96	1.43	6.000	.160	3.000	.160	1.01	69.5
5 X 1.74	14.67	5.12	20.16	2.03	1.37	3.94	1.48	5.000	.125	4.000	.220	.66	94.5
7 X 1.77	17.97	5.01	26.70	2.33	1.49	5.33	1.51	6.500	.160	3.000	.160	1.09	64.6
5 X 1.82	16.29	5.73	24.64	2.23	1.51	4.50	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.86	19.50	5.55	31.59	2.51	1.62	5.69	1.59	7.000	.160	3.000	.160	1.17	63.8
6 X 1.96	17.23	5.50	26.32	2.29	1.53	4.78	1.51	6.000	.160	3.500	.190	1.01	78.4
7 X 1.98	18.80	6.10	31.39	2.48	1.67	5.14	1.69	6.500	.160	3.500	.190	1.09	77.4
7 X 2.07	20.38	6.72	36.97	2.67	1.81	5.50	1.77	7.000	.160	3.500	.190	1.17	76.4
6 X 2.13	17.86	6.67	30.65	2.42	1.71	4.80	1.82	6.000	.160	4.000	.220	1.01	91.6
7 X 2.22	19.50	7.36	36.41	2.62	1.87	4.95	1.90	6.500	.160	4.000	.220	1.09	90.4
7 X 2.32	21.13	8.08	42.73	2.81	2.02	5.29	1.98	7.000	.160	4.000	.220	1.17	89.3
6 X 2.50	18.64	8.67	37.37	2.58	2.00	4.31	2.18	6.000	.160	5.000	.250	1.01	119.0
7 X 2.65	20.33	9.54	44.23	2.79	2.18	4.64	2.26	6.500	.160	5.000	.250	1.09	117.3
7 X 2.75	22.03	10.42	51.73	3.00	2.35	4.96	2.34	7.000	.160	5.000	.250	1.17	115.8
8 X 3.10	23.79	11.70	61.26	3.18	2.58	5.24	2.54	7.500	.190	5.000	.250	1.48	114.5
8 X 3.21	25.51	12.67	70.37	3.38	2.76	5.55	2.74	8.000	.190	5.000	.250	1.58	113.3
6 X 3.26	19.65	11.96	46.07	2.74	2.41	3.90	2.80	6.000	.160	6.000	.313	1.01	148.0
7 X 3.36	21.11	13.11	55.11	2.96	2.61	4.26	2.88	6.500	.160	6.000	.313	1.09	145.6
7 X 3.47	22.69	14.28	64.29	3.18	2.81	4.60	2.96	7.000	.160	6.000	.313	1.17	143.5
8 X 3.82	24.79	15.78	75.34	3.36	3.04	4.77	3.26	7.500	.190	6.000	.313	1.48	141.8
8 X 3.94	26.00	17.03	86.31	3.57	3.24	5.07	3.35	8.000	.190	6.000	.313	1.58	140.2
9 X 4.34	28.61	18.71	99.08	3.74	3.48	5.33	3.70	8.500	.220	6.000	.313	1.94	138.7
9 X 4.47	30.48	20.04	112.59	3.95	3.69	5.62	3.81	9.000	.220	6.000	.313	2.05	137.4
10 X 4.60	32.35	21.40	126.39	4.15	3.91	5.91	3.92	9.500	.220	6.000	.313	2.16	136.2
8 X 4.70	29.04	21.25	108.14	3.80	3.72	5.09	4.06	8.500	.220	6.000	.375	1.94	138.7
9 X 4.89	30.95	22.74	122.06	4.01	3.94	5.37	4.17	9.000	.220	6.000	.375	2.05	137.4
10 X 5.02	32.87	24.25	136.94	4.22	4.17	5.65	4.26	9.500	.220	6.000	.375	2.16	136.2
8 X 5.42	29.06	25.44	120.71	3.88	4.07	4.75	4.02	8.500	.220	7.500	.375	1.94	180.4
10 X 5.50	35.14	26.31	155.14	4.38	4.41	5.90	4.68	10.000	.250	6.000	.375	2.56	135.0
9 X 5.55	31.04	27.17	130.13	4.09	4.30	5.01	4.73	9.000	.220	7.500	.375	2.05	178.5
11 X 5.64	37.13	27.92	172.30	4.58	4.64	6.17	4.81	10.500	.250	6.000	.375	2.70	134.0
10 X 5.68	33.61	28.93	152.56	4.30	4.54	5.27	4.84	9.500	.220	7.500	.375	2.16	176.8
11 X 5.79	39.14	29.55	190.48	4.78	4.87	6.45	4.93	11.000	.250	6.000	.375	2.83	132.9

35T EFFECTIVE WIDTH

.313 IN. PLATE (AREA= 3.42 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	35.00	29.24	165.58	4.42	4.65	5.00	5.05	10.000	.250	5.000	.438	2.58	135.0
11 X 6.07	37.04	31.01	183.82	4.63	4.88	5.93	5.17	10.500	.250	5.000	.438	2.70	134.0
10 X 6.16	35.99	31.18	172.29	4.46	4.79	5.53	5.25	10.000	.250	7.500	.375	2.58	175.2
11 X 6.21	39.09	32.79	205.13	4.83	5.12	6.19	5.30	11.000	.250	5.000	.438	2.83	132.9
11 X 6.30	38.05	33.03	191.10	4.66	5.02	5.79	5.37	10.500	.250	7.500	.375	2.70	173.8
11 X 6.45	40.12	34.39	211.12	4.87	5.26	6.05	5.50	11.000	.250	7.500	.375	2.83	172.4
12 X 7.38	45.03	37.88	255.29	5.11	5.53	6.69	6.29	12.000	.313	6.000	.438	3.85	131.0
13 X 7.50	47.25	39.86	277.01	5.30	5.80	6.95	6.45	12.500	.313	6.000	.438	4.01	130.1
12 X 7.62	45.55	40.14	262.74	5.15	5.77	6.54	6.49	12.000	.313	7.500	.375	3.85	169.9
13 X 7.80	47.80	42.21	287.19	5.34	6.01	6.80	6.65	12.500	.313	7.500	.375	4.01	166.8
13 X 7.90	47.85	43.01	291.28	5.34	6.09	6.73	6.80	12.500	.313	5.000	.500	4.01	130.1
13 X 7.99	50.07	44.30	312.90	5.53	6.25	7.06	6.81	13.000	.313	7.500	.375	4.17	167.7
13 X 8.10	50.14	45.46	317.41	5.53	6.33	6.98	6.95	13.000	.313	5.000	.500	4.17	129.2
14 X 8.17	52.37	46.42	339.86	5.72	6.49	7.52	6.96	13.500	.313	7.500	.375	4.32	166.7
14 X 8.35	52.45	47.64	344.83	5.72	6.57	7.24	7.11	13.500	.313	6.000	.500	4.32	128.4
12 X 8.41	46.55	46.05	280.89	5.21	6.16	6.15	7.16	12.000	.313	8.000	.438	3.85	183.2
13 X 8.59	48.87	48.39	313.44	5.40	6.41	6.40	7.32	12.500	.313	8.000	.438	4.01	182.0
13 X 8.78	51.21	51.35	341.33	5.60	6.66	6.65	7.48	13.000	.313	8.000	.438	4.17	180.8
14 X 8.96	53.58	53.73	370.57	5.79	6.92	6.90	7.63	13.500	.313	8.000	.438	4.32	179.7
12 X 8.97	47.06	51.06	301.56	5.22	6.41	5.90	7.64	12.000	.313	8.000	.500	3.85	183.2
13 X 9.15	49.42	53.61	329.46	5.42	6.67	6.15	7.80	12.500	.313	8.000	.500	4.01	182.0
13 X 9.34	51.80	56.16	358.73	5.62	6.92	6.39	7.95	13.000	.313	8.000	.500	4.17	180.8
14 X 9.52	54.22	58.74	389.42	5.81	7.18	6.63	8.11	13.500	.313	8.000	.500	4.32	179.7

35T EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 4.92 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.61	.48	.76	.38	.29	1.58	.43	1.500	.125	2.000	.125	.23	53.2
2 X .58	4.12	.68	1.38	.50	.33	2.04	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	5.80	.89	2.22	.64	.38	2.49	.55	2.500	.125	2.000	.125	.36	47.3
3 X .72	7.60	1.12	3.30	.77	.43	2.94	.62	3.000	.125	2.000	.125	.42	45.8
3 X .72	6.30	1.05	2.56	.68	.41	2.47	.62	2.500	.125	2.500	.125	.36	61.7
3 X .80	8.17	1.31	3.81	.83	.47	2.91	.68	3.000	.125	2.500	.125	.42	59.5
4 X .87	10.11	1.59	5.34	.97	.53	3.35	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	12.09	1.90	7.17	1.12	.59	3.78	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	14.10	2.22	9.34	1.27	.66	4.21	.87	4.500	.125	2.500	.125	.61	55.6
5 X 1.09	16.15	2.56	11.86	1.42	.74	4.64	.93	5.000	.125	2.500	.125	.67	54.6
4 X 1.13	13.40	2.53	9.51	1.26	.69	3.68	.97	4.000	.125	3.000	.160	.55	70.1
5 X 1.16	18.17	2.91	14.75	1.58	.81	5.06	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	15.50	2.93	12.01	1.42	.77	4.10	1.03	4.500	.125	3.000	.160	.61	68.7
5 X 1.26	17.01	3.35	15.11	1.59	.86	4.52	1.09	5.000	.125	3.000	.160	.67	67.5
6 X 1.35	19.73	3.78	18.64	1.75	.95	4.93	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.60	15.18	4.02	13.90	1.49	.92	3.46	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.67	17.42	4.51	17.77	1.67	1.02	3.86	1.42	4.500	.125	4.000	.220	.61	96.4
6 X 1.67	21.04	4.60	24.21	1.95	1.11	5.27	1.43	6.000	.160	3.000	.160	1.02	65.5
5 X 1.74	19.67	5.21	22.15	1.86	1.13	4.25	1.48	5.000	.125	4.000	.220	.67	94.5
7 X 1.77	23.95	5.13	29.05	2.13	1.21	5.66	1.51	6.500	.160	3.000	.160	1.10	64.6
6 X 1.82	21.91	5.04	27.08	2.05	1.24	4.64	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.86	26.07	5.08	34.42	2.30	1.32	5.05	1.59	7.000	.160	3.000	.160	1.18	63.8
6 X 1.88	23.05	5.63	28.83	2.10	1.25	5.12	1.61	6.000	.160	3.500	.190	1.02	78.4
7 X 1.98	25.23	6.24	34.41	2.28	1.36	5.51	1.69	6.500	.160	3.500	.190	1.10	77.4
7 X 2.07	27.41	6.38	40.57	2.46	1.46	5.89	1.77	7.000	.160	3.500	.190	1.18	76.4
6 X 2.13	24.38	6.81	33.80	2.24	1.41	4.97	1.82	6.000	.160	4.000	.220	1.02	91.6
7 X 2.22	26.32	7.53	40.25	2.43	1.53	5.35	1.90	6.500	.160	4.000	.220	1.10	90.4
7 X 2.32	28.56	8.27	47.28	2.62	1.66	5.72	1.98	7.000	.160	4.000	.220	1.18	89.3
8 X 2.56	25.32	8.87	41.87	2.43	1.65	4.72	2.18	6.000	.160	5.000	.250	1.02	119.0
7 X 2.69	27.04	9.75	49.37	2.63	1.79	5.08	2.20	6.500	.160	5.000	.250	1.10	117.3
7 X 2.75	29.97	10.66	58.00	2.83	1.94	5.44	2.34	7.000	.160	5.000	.250	1.18	115.8
8 X 3.10	32.27	12.00	68.90	3.02	2.14	5.74	2.64	7.500	.190	5.000	.250	1.50	114.5
8 X 3.21	34.60	13.31	79.19	3.22	2.29	6.09	2.74	8.000	.190	5.000	.250	1.59	113.3
6 X 3.28	26.51	12.24	53.39	2.63	2.01	4.36	2.80	6.000	.160	6.000	.313	1.02	148.0
7 X 3.38	28.92	13.42	63.62	2.84	2.18	4.70	2.88	6.500	.160	6.000	.313	1.10	145.6
7 X 3.47	31.35	14.62	73.52	3.03	2.35	5.03	2.96	7.000	.160	6.000	.313	1.18	143.5
8 X 3.82	33.80	16.21	80.26	3.25	2.55	5.32	3.26	7.500	.190	6.000	.313	1.50	141.8
8 X 3.94	36.25	17.49	98.82	3.46	2.73	5.65	3.35	8.000	.190	6.000	.313	1.59	140.2
9 X 4.34	38.78	19.27	114.27	3.64	2.95	5.93	3.70	8.500	.220	6.000	.313	1.95	138.7
9 X 4.47	41.26	20.66	129.07	3.84	3.13	6.25	3.81	9.000	.220	6.000	.313	2.06	137.4
10 X 4.60	43.75	22.08	144.89	4.05	3.31	6.56	3.92	9.500	.220	6.000	.313	2.17	136.2
9 X 4.76	39.43	21.91	124.98	3.73	3.17	5.70	4.06	8.500	.220	6.000	.375	1.95	138.7
9 X 4.89	41.96	23.46	141.05	3.94	3.30	6.01	4.17	9.000	.220	6.000	.375	2.06	137.4
10 X 5.02	44.50	25.03	156.20	4.15	3.55	6.32	4.28	9.500	.220	6.000	.375	2.17	136.2
9 X 5.42	40.36	26.23	141.10	3.85	3.50	5.38	4.62	8.500	.220	7.500	.375	1.95	180.4
10 X 5.50	47.26	27.23	179.24	4.32	3.79	6.58	4.68	10.000	.250	6.000	.375	2.59	135.0
9 X 5.55	42.96	26.63	159.63	4.06	3.70	5.67	4.73	9.000	.220	7.500	.375	2.06	178.5
11 X 5.64	49.86	28.91	199.02	4.52	3.99	6.88	4.81	10.500	.250	6.000	.375	2.72	134.0
10 X 5.68	45.57	29.36	178.13	4.27	3.91	5.97	4.84	9.500	.220	7.500	.375	2.17	176.8
11 X 5.79	52.47	30.82	219.97	4.72	4.19	7.18	4.93	11.000	.250	6.000	.375	2.84	132.9

35T EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 4.92 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	47.92	30.29	192.54	4.40	4.02	6.36	5.05	10.000	.250	5.000	.438	2.59	135.0
11 X 6.07	50.57	32.13	213.69	4.60	4.22	6.05	5.17	10.500	.250	5.000	.438	2.72	134.0
10 X 6.16	48.46	32.27	200.97	4.45	4.15	6.23	5.25	10.000	.250	7.500	.375	2.59	175.2
11 X 6.21	53.23	34.00	239.99	4.81	4.43	6.94	5.30	11.000	.250	5.000	.438	2.84	132.9
11 X 6.30	51.13	34.20	222.86	4.65	4.36	6.52	5.37	10.500	.250	7.500	.375	2.72	173.8
11 X 6.45	53.82	36.15	246.00	4.86	4.57	6.80	5.50	11.000	.250	7.500	.375	2.84	172.4
12 X 7.38	59.48	39.49	293.07	5.12	4.94	7.44	6.29	12.000	.313	6.000	.438	3.87	131.0
13 X 7.50	62.26	41.57	321.00	5.31	5.15	7.72	6.45	12.500	.313	6.000	.438	4.03	130.1
12 X 7.62	60.17	41.82	305.33	5.17	5.07	7.30	6.49	12.000	.313	7.500	.375	3.87	169.9
13 X 7.80	63.00	44.00	333.54	5.37	5.29	7.58	6.65	12.500	.313	7.500	.375	4.03	166.8
13 X 7.96	63.09	45.18	336.96	5.38	5.37	7.50	6.80	12.500	.313	6.000	.500	4.03	130.1
13 X 7.99	65.80	46.20	365.18	5.56	5.51	7.86	6.81	13.000	.313	7.500	.375	4.19	167.7
13 X 8.16	65.97	47.45	369.12	5.57	5.60	7.78	6.95	13.000	.313	6.000	.500	4.19	129.2
14 X 8.17	68.74	48.44	394.25	5.76	5.74	8.14	6.96	13.500	.313	7.500	.375	4.34	166.7
14 X 8.35	68.87	49.74	400.73	5.77	5.82	8.06	7.11	13.500	.313	6.000	.500	4.34	128.4
12 X 8.41	61.51	48.01	336.00	5.27	5.46	6.91	7.16	12.000	.313	8.000	.438	3.87	183.2
13 X 8.59	64.43	51.08	360.76	5.47	5.69	7.18	7.32	12.500	.313	8.000	.438	4.03	182.0
13 X 8.70	67.37	53.55	389.04	5.67	5.92	7.45	7.48	13.000	.313	8.000	.438	4.19	180.8
14 X 8.90	70.34	56.06	432.86	5.87	6.15	7.72	7.63	13.500	.313	8.000	.438	4.34	179.7
12 X 8.97	62.20	53.25	355.01	5.32	5.71	6.67	7.64	12.000	.313	8.000	.500	3.87	183.2
13 X 9.15	65.17	55.90	387.41	5.92	5.94	6.93	7.80	12.500	.313	8.000	.500	4.03	182.0
13 X 9.34	68.16	58.58	421.40	5.72	6.18	7.19	7.95	13.000	.313	8.000	.500	4.19	180.8
14 X 9.52	71.10	61.30	456.98	5.92	6.42	7.46	8.11	13.500	.313	8.000	.500	4.34	179.7

35T EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 6.73 SQ. IN.)

NOM. D	X	LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.50	2.71	.49	.81	.34	.30	1.64	.43	1.500	.125	2.000	.125	.24	53.2
2	X	.56	4.38	.89	1.45	.45	.33	2.11	.49	2.000	.125	2.000	.125	.30	49.3
3	X	.65	6.33	.91	2.33	.57	.37	2.57	.55	2.500	.125	2.000	.125	.37	47.3
3	X	.72	8.48	1.14	3.40	.69	.41	3.03	.62	3.000	.125	2.000	.125	.43	45.8
3	X	.72	8.98	1.07	2.72	.61	.39	2.55	.62	2.500	.125	2.500	.125	.37	61.7
3	X	.80	9.25	1.33	4.01	.74	.43	3.00	.68	3.000	.125	2.500	.125	.43	59.5
4	X	.87	11.65	1.62	5.60	.87	.48	3.46	.74	3.500	.125	2.500	.125	.49	57.9
4	X	.94	14.16	1.93	7.52	1.00	.53	3.91	.80	4.000	.125	2.500	.125	.55	56.6
5	X	1.02	16.74	2.25	9.80	1.14	.59	4.35	.87	4.500	.125	2.500	.125	.62	55.6
5	X	1.09	19.37	2.60	12.45	1.28	.64	4.79	.93	5.000	.125	2.500	.125	.68	54.6
4	X	1.13	18.33	2.57	9.62	1.13	.51	3.83	.97	4.000	.125	3.000	.160	.55	70.1
6	X	1.16	22.04	2.96	15.49	1.42	.70	5.23	.99	5.500	.125	2.500	.125	.74	53.7
5	X	1.21	18.77	2.97	12.67	1.28	.57	4.26	1.03	4.500	.125	3.000	.160	.62	68.7
5	X	1.26	21.53	3.40	15.95	1.43	.74	4.70	1.09	5.000	.125	3.000	.160	.68	67.5
6	X	1.35	24.31	3.84	19.68	1.56	.81	5.13	1.15	5.500	.125	3.000	.160	.74	66.5
4	X	1.60	18.60	4.08	14.38	1.36	.79	3.65	1.36	4.000	.125	4.000	.220	.55	98.7
5	X	1.67	21.74	4.08	19.00	1.53	.87	4.06	1.42	4.500	.125	4.000	.220	.62	96.4
6	X	1.67	27.23	4.08	25.69	1.78	.94	5.49	1.43	5.500	.160	3.000	.160	1.03	65.5
5	X	1.74	24.70	5.29	23.69	1.70	.96	4.48	1.48	5.000	.125	4.000	.220	.68	94.5
7	X	1.77	30.03	5.22	36.85	1.94	1.03	5.91	1.51	6.500	.160	3.000	.160	1.11	64.6
6	X	1.82	27.07	5.92	28.96	1.67	1.05	4.89	1.55	5.500	.125	4.000	.220	.74	93.0
7	X	1.86	32.83	5.79	36.58	2.10	1.11	6.32	1.59	7.000	.160	3.000	.160	1.19	63.8
5	X	1.86	29.02	5.72	30.76	1.92	1.06	5.38	1.61	6.000	.160	3.500	.190	1.03	78.4
7	X	1.96	31.90	6.35	36.73	2.09	1.15	5.79	1.69	6.500	.160	3.500	.190	1.11	77.4
7	X	2.07	34.78	7.00	43.34	2.26	1.25	6.19	1.77	7.000	.160	3.500	.190	1.19	76.4
6	X	2.13	30.57	6.93	36.35	2.07	1.19	5.25	1.82	6.000	.160	4.000	.220	1.03	91.6
7	X	2.22	33.53	7.65	43.23	2.24	1.29	5.85	1.90	6.500	.160	4.000	.220	1.11	90.4
7	X	2.32	36.49	8.41	50.81	2.42	1.39	6.04	1.96	7.000	.160	4.000	.220	1.19	89.3
6	X	2.50	32.47	9.61	45.41	2.26	1.40	5.04	2.18	6.000	.160	5.000	.250	1.03	119.0
7	X	2.65	35.54	9.92	53.78	2.45	1.51	5.42	2.26	6.500	.160	5.000	.250	1.11	117.3
7	X	2.75	38.60	10.84	62.95	2.64	1.63	5.81	2.34	7.000	.160	5.000	.250	1.19	115.8
8	X	3.10	41.98	12.23	75.02	2.83	1.80	6.13	2.64	7.500	.190	5.000	.250	1.51	114.5
6	X	3.21	44.04	13.26	66.27	3.02	1.93	6.91	2.74	8.000	.190	5.000	.250	1.60	113.3
6	X	3.28	34.36	12.45	56.83	2.49	1.71	4.73	2.80	6.000	.160	6.000	.313	1.03	148.0
7	X	3.38	37.95	13.65	69.44	2.69	1.85	5.09	2.88	6.500	.160	6.000	.313	1.11	145.6
7	X	3.47	40.74	14.87	81.01	2.90	1.99	5.45	2.96	7.000	.160	6.000	.313	1.19	143.5
8	X	3.82	43.88	16.52	95.24	3.09	2.17	5.77	3.26	7.500	.190	6.000	.313	1.51	141.8
8	X	3.94	47.07	17.83	109.12	3.29	2.32	6.12	3.35	8.000	.190	6.000	.313	1.60	140.2
8	X	4.34	50.24	19.09	120.44	3.49	2.52	6.42	3.70	8.500	.220	6.000	.313	1.97	138.7
9	X	4.47	53.45	21.12	142.87	3.69	2.67	6.76	3.81	9.000	.220	6.000	.313	2.08	137.4
10	X	4.56	56.67	22.57	166.42	3.89	2.83	7.11	3.92	9.500	.220	6.000	.313	2.19	136.2
9	X	4.76	51.20	22.39	159.22	3.60	2.72	6.22	4.06	8.500	.220	6.000	.375	1.97	138.7
9	X	4.89	54.47	23.98	187.14	3.80	2.88	6.55	4.17	9.000	.220	6.000	.375	2.08	137.4
10	X	5.02	57.75	25.50	176.27	4.01	3.05	6.89	4.28	9.500	.220	6.000	.375	2.19	136.2
9	X	5.42	52.54	26.81	198.60	3.74	3.02	5.92	4.52	8.500	.220	7.500	.375	1.97	180.4
10	X	5.50	61.12	27.91	200.00	4.19	3.27	7.17	4.66	10.000	.250	6.000	.375	2.61	135.0
9	X	5.52	55.96	28.66	178.81	3.96	3.20	6.24	4.73	9.000	.220	7.500	.375	2.08	178.5
11	X	5.64	64.43	29.65	222.11	4.39	3.45	7.49	4.81	10.500	.250	6.000	.375	2.73	134.0
10	X	5.88	59.27	30.54	200.27	4.17	3.38	6.56	4.84	9.500	.220	7.500	.375	2.19	176.8
11	X	5.79	67.76	31.42	245.53	4.39	3.62	7.81	4.93	11.000	.250	6.000	.375	2.86	132.9

35T EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 6.70 SQ. IN.)

NOM. D	A	LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10	X	5.92	62.05	31.06	216.02	4.29	3.46	6.96	5.05	10.000	.250	5.000	.438	2.61	135.0
11	X	6.07	65.43	32.96	239.72	4.49	3.66	7.27	5.17	10.500	.250	6.000	.438	2.73	134.0
10	X	6.16	62.77	33.08	226.89	4.39	3.60	6.84	5.25	10.000	.250	7.500	.375	2.61	175.2
11	X	6.21	66.82	34.69	264.79	4.70	3.85	7.59	5.30	11.000	.250	5.000	.438	2.86	132.9
11	X	6.30	66.18	35.07	250.71	4.56	3.79	7.15	5.37	10.500	.250	7.500	.375	2.73	173.8
11	X	6.45	69.00	37.09	270.73	4.76	3.98	7.46	5.50	11.000	.250	7.500	.375	2.86	172.4
12	X	7.38	76.18	40.71	329.99	5.04	4.33	8.11	6.29	12.000	.313	6.000	.438	3.89	131.0
13	X	7.56	79.08	42.88	360.69	5.24	4.53	8.41	6.45	12.500	.313	6.000	.438	4.05	130.1
12	X	7.62	77.08	43.10	343.62	5.11	4.40	7.98	6.49	12.000	.313	7.500	.375	3.89	169.9
13	X	7.80	80.61	45.36	375.56	5.30	4.66	8.28	6.65	12.500	.313	7.500	.375	4.05	168.8
13	X	7.98	80.75	46.61	382.33	5.32	4.73	8.20	6.80	12.500	.313	6.000	.500	4.05	130.1
13	X	7.99	84.17	47.66	408.89	5.50	4.86	8.58	6.81	13.000	.313	7.500	.375	4.21	167.7
13	X	8.16	84.33	48.97	416.28	5.52	4.94	8.50	6.95	13.000	.313	6.000	.500	4.21	129.2
14	X	8.17	87.74	49.09	443.84	5.70	5.06	8.88	6.96	13.500	.313	7.500	.375	4.36	166.7
14	X	8.35	87.93	51.36	451.88	5.72	5.14	8.80	7.11	13.500	.313	6.000	.500	4.36	128.4
12	X	8.41	78.86	50.10	381.02	5.24	4.83	7.61	7.16	12.000	.313	8.000	.438	3.89	183.2
13	X	8.59	82.50	52.05	415.79	5.45	5.04	7.90	7.32	12.500	.313	8.000	.438	4.05	182.0
13	X	8.78	86.16	55.23	452.26	5.65	5.25	8.19	7.48	13.000	.313	8.000	.438	4.21	180.8
14	X	8.90	89.83	57.85	490.45	5.85	5.46	8.48	7.63	13.500	.313	8.000	.438	4.36	179.7
12	X	8.97	79.78	54.89	404.40	5.31	5.07	7.37	7.64	12.000	.313	8.000	.500	3.89	183.2
13	X	9.15	83.48	57.05	441.20	5.52	5.28	7.65	7.80	12.500	.313	8.000	.500	4.05	182.0
13	X	9.34	87.20	59.44	479.70	5.72	5.50	7.94	7.95	13.000	.313	8.000	.500	4.21	180.8
14	X	9.52	90.94	63.26	520.00	5.93	5.72	8.22	8.11	13.500	.313	8.000	.500	4.36	179.7

35T EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 8.75 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.72	.51	.85	.30	.31	1.69	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	4.48	.70	1.52	.41	.34	2.16	.49	2.000	.125	2.000	.125	.31	49.3
3 X .65	6.60	.92	2.43	.51	.37	2.63	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	9.00	1.16	3.60	.62	.40	3.10	.62	3.000	.125	2.000	.125	.44	45.8
3 X .72	7.37	1.09	2.84	.55	.39	2.61	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	9.93	1.30	4.17	.67	.42	3.08	.66	3.000	.125	2.500	.125	.44	59.5
4 X .87	12.73	1.64	5.82	.78	.46	3.54	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	15.09	1.95	7.82	.90	.50	4.00	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	18.66	2.28	10.17	1.03	.54	4.46	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	22.01	2.63	12.92	1.16	.59	4.91	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	16.18	2.60	10.24	1.03	.56	3.94	.97	4.000	.125	3.000	.160	.56	70.1
5 X 1.16	25.31	3.00	16.08	1.28	.64	5.36	.99	5.500	.125	2.500	.125	.75	53.7
5 X 1.21	21.51	3.01	13.20	1.16	.61	4.39	1.03	4.500	.125	3.000	.160	.63	68.7
5 X 1.28	24.93	3.44	16.02	1.30	.67	4.83	1.09	5.000	.125	3.000	.160	.69	67.5
5 X 1.35	28.40	3.88	20.50	1.44	.72	5.28	1.15	5.500	.125	3.000	.160	.75	66.5
4 X 1.60	22.04	4.13	15.06	1.24	.71	3.79	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	25.71	4.73	19.99	1.40	.78	4.22	1.42	4.500	.125	4.000	.220	.63	96.4
6 X 1.67	32.26	4.74	26.87	1.62	.83	5.07	1.43	6.000	.160	3.000	.160	1.04	65.5
5 X 1.74	29.43	5.35	24.91	1.56	.85	4.65	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	35.61	5.29	32.27	1.77	.90	6.10	1.51	6.500	.160	3.000	.160	1.12	64.6
5 X 1.82	33.18	5.99	30.45	1.72	.92	5.58	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	39.38	5.87	38.30	1.92	.97	6.53	1.59	7.000	.160	3.000	.160	1.20	63.8
6 X 1.88	34.75	5.80	32.29	1.77	.93	5.57	1.61	6.000	.160	3.500	.190	1.04	78.4
7 X 1.98	38.41	6.43	38.58	1.92	1.00	6.00	1.69	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	42.88	7.10	45.54	2.08	1.08	6.42	1.77	7.000	.160	3.500	.190	1.20	76.4
6 X 2.13	36.90	7.02	38.33	1.90	1.04	5.46	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	40.73	7.76	45.00	2.07	1.12	5.88	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	44.50	8.52	53.02	2.24	1.20	6.30	1.98	7.000	.160	4.000	.220	1.20	89.3
6 X 2.50	39.74	9.13	48.20	2.10	1.21	5.29	2.18	6.000	.160	5.000	.250	1.04	119.0
7 X 2.65	43.64	10.04	57.16	2.28	1.31	5.09	2.26	6.500	.160	5.000	.250	1.12	117.3
7 X 2.75	47.55	10.98	66.91	2.46	1.41	6.09	2.34	7.000	.160	5.000	.250	1.20	115.8
8 X 3.10	51.36	12.41	79.96	2.69	1.56	6.44	2.64	7.500	.190	5.000	.250	1.52	114.5
8 X 3.21	55.26	13.46	91.98	2.83	1.66	6.84	2.74	8.000	.190	5.000	.250	1.62	113.3
6 X 3.28	42.56	12.62	83.27	2.34	1.49	5.01	2.80	6.000	.160	6.000	.313	1.04	148.0
7 X 3.36	46.65	13.83	94.67	2.53	1.60	5.40	2.86	6.500	.160	6.000	.313	1.12	145.6
7 X 3.47	50.72	15.06	87.11	2.73	1.72	5.78	2.96	7.000	.160	6.000	.313	1.20	143.5
8 X 3.82	54.67	16.76	102.00	2.92	1.88	6.12	3.26	7.500	.190	6.000	.313	1.52	141.8
8 X 3.94	58.73	18.09	117.58	3.12	2.00	6.50	3.35	8.000	.190	6.000	.313	1.62	140.2
9 X 4.34	62.69	20.01	136.53	3.31	2.18	6.82	3.70	8.500	.220	6.000	.313	1.98	138.7
9 X 4.47	66.75	21.47	154.32	3.51	2.31	7.19	3.81	9.000	.220	6.000	.313	2.09	137.4
10 X 4.80	70.80	22.95	173.35	3.70	2.45	7.55	3.92	9.500	.220	6.000	.313	2.20	136.2
8 X 4.76	64.06	22.76	151.14	3.44	2.36	6.64	4.06	8.500	.220	6.000	.375	1.98	138.7
9 X 4.89	68.19	24.38	170.63	3.63	2.50	7.00	4.17	9.000	.220	6.000	.375	2.09	137.4
10 X 5.02	72.33	26.04	191.44	3.83	2.65	7.35	4.28	9.500	.220	6.000	.375	2.20	136.2
9 X 5.42	65.97	27.25	173.58	3.60	2.63	6.37	4.62	8.500	.220	7.500	.375	1.98	180.4
10 X 5.60	70.43	28.44	217.62	4.02	2.85	7.65	4.68	10.000	.250	6.000	.375	2.63	139.0
9 X 5.55	70.20	29.14	195.63	3.81	2.79	6.71	4.73	9.000	.220	7.500	.375	2.09	178.5
11 X 5.84	80.58	30.22	241.75	4.22	3.00	8.00	4.81	10.500	.250	6.000	.375	2.75	134.0
10 X 5.88	74.44	31.85	219.13	4.02	2.94	7.06	4.84	9.500	.220	7.500	.375	2.20	176.8
11 X 5.79	84.74	32.83	267.32	4.42	3.15	8.35	4.93	11.000	.250	6.000	.375	2.68	132.9

35T EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 8.75 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	77.72	31.04	236.12	4.14	3.04	7.46	5.05	10.000	.250	5.000	.438	2.63	135.0
11 X 6.07	81.95	33.59	262.07	4.34	3.20	7.80	5.17	10.500	.250	5.000	.438	2.75	134.0
10 X 6.16	78.08	33.69	247.76	4.21	3.15	7.35	5.25	10.000	.250	7.500	.375	2.63	175.2
11 X 6.21	86.18	35.57	289.54	4.54	3.36	8.14	5.30	11.000	.250	5.000	.438	2.88	132.9
11 X 6.30	82.94	35.73	274.71	4.41	3.31	7.69	5.37	10.500	.250	7.500	.375	2.75	173.8
11 X 6.45	87.21	37.86	303.27	4.61	3.48	8.02	5.50	11.000	.250	7.500	.375	2.88	172.4
12 X 7.36	94.89	+1.66	361.88	4.91	3.31	8.69	5.29	12.000	.313	6.000	.438	3.91	131.0
13 X 7.36	99.21	+3.90	395.04	5.10	3.99	9.01	6.49	12.500	.313	6.000	.438	4.07	130.1
12 X 7.52	96.05	+4.69	377.75	4.98	3.93	8.57	6.49	12.000	.313	7.500	.375	3.91	169.9
13 X 7.60	100.40	+6.43	412.09	5.18	4.11	8.89	6.65	12.500	.313	7.500	.375	4.07	168.8
13 X 7.98	100.61	+7.72	420.77	5.20	4.18	8.82	6.80	12.500	.313	6.000	.500	4.07	130.1
13 X 7.99	104.70	+8.79	449.40	5.37	4.29	9.21	6.81	13.000	.313	7.500	.375	4.23	167.7
13 X 8.16	105.00	+8.15	458.19	5.40	4.36	9.14	6.95	13.000	.313	6.000	.500	4.23	129.2
14 X 8.17	109.15	51.20	487.69	5.57	4.47	9.53	6.96	13.500	.313	7.500	.375	4.38	166.7
14 X 8.35	109.41	52.62	497.44	5.60	4.55	9.45	7.11	13.500	.313	6.000	.500	4.38	128.4
12 X 8.41	98.40	51.25	421.22	5.14	4.28	8.22	7.16	12.000	.313	8.000	.438	3.91	183.2
13 X 8.59	102.87	53.03	459.07	5.35	4.47	8.53	7.32	12.500	.313	8.000	.438	4.07	182.0
13 X 8.78	107.35	56.54	499.99	5.55	4.66	8.84	7.48	13.000	.313	8.000	.438	4.23	180.6
14 X 8.96	111.85	59.24	542.22	5.75	4.85	9.15	7.63	13.500	.313	8.000	.438	4.38	179.7
12 X 8.97	99.62	56.17	448.99	5.23	4.51	7.99	7.64	12.000	.313	8.000	.500	3.91	183.2
13 X 9.15	104.17	59.01	489.72	5.44	4.70	8.30	7.80	12.500	.313	8.000	.500	4.07	182.0
13 X 9.34	108.72	61.89	532.42	5.65	4.90	8.60	7.95	13.000	.313	8.000	.500	4.23	180.8
14 X 9.52	113.30	64.80	577.11	5.85	5.09	8.91	8.11	13.500	.313	8.000	.500	4.38	179.7

35T EFFECTIVE WIDTH

.625 IN. PLATE (AREA=13.67 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.04	.53	.94	.26	.36	1.77	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	4.42	.73	1.65	.34	.37	2.25	.49	2.000	.125	2.000	.125	.33	49.3
3 X .65	6.05	.95	2.01	.43	.39	2.73	.55	2.500	.125	2.000	.125	.39	47.3
3 X .72	9.30	1.20	3.04	.52	.41	3.21	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	7.56	1.12	3.05	.46	.40	2.72	.62	2.500	.125	2.500	.125	.39	51.7
3 X .80	10.44	1.39	4.40	.56	.43	3.20	.68	3.000	.125	2.500	.125	.45	59.5
4 X .87	13.71	1.69	6.20	.66	.45	3.67	.74	3.500	.125	2.500	.125	.52	57.9
4 X .94	17.30	2.00	8.30	.76	.48	4.15	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	21.19	2.34	10.78	.86	.51	4.62	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	25.34	2.69	13.07	.97	.54	5.09	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	20.62	2.66	10.92	.86	.52	4.10	.97	4.000	.125	3.000	.160	.58	70.1
5 X 1.16	29.70	3.06	17.00	1.08	.57	5.55	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	25.15	3.08	14.05	.98	.56	4.57	1.03	4.500	.125	3.000	.160	.64	68.7
5 X 1.28	29.70	3.51	17.06	1.09	.59	5.03	1.09	5.000	.125	3.000	.160	.70	67.5
6 X 1.35	34.43	3.97	21.78	1.21	.63	5.49	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.50	26.92	4.23	16.90	1.06	.63	4.00	1.36	4.000	.125	4.000	.220	.58	98.7
5 X 1.67	31.95	4.84	21.53	1.19	.67	4.49	1.42	4.500	.125	4.000	.220	.64	90.4
6 X 1.67	40.32	4.85	28.07	1.38	.71	5.91	1.43	6.000	.160	3.000	.160	1.06	65.5
5 X 1.74	37.14	5.40	26.79	1.33	.72	4.90	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	45.41	5.41	34.44	1.51	.76	6.37	1.51	6.000	.160	3.000	.160	1.14	64.6
6 X 1.82	42.46	6.11	32.71	1.47	.77	5.35	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	50.58	6.30	40.88	1.64	.81	6.82	1.59	7.000	.160	3.000	.160	1.22	63.8
6 X 1.88	44.43	5.92	34.62	1.51	.76	5.85	1.51	6.000	.160	3.500	.190	1.06	78.4
7 X 1.96	49.73	6.57	41.36	1.64	.83	6.29	1.59	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	55.10	7.25	48.83	1.78	.89	6.74	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	48.20	7.17	41.33	1.63	.86	5.77	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	53.76	7.92	49.17	1.78	.91	6.21	1.90	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	59.32	8.69	57.82	1.92	.97	6.65	1.98	7.000	.160	4.000	.220	1.22	89.3
6 X 2.56	53.31	9.32	52.56	1.82	.99	5.64	2.16	6.000	.160	5.000	.250	1.06	119.0
7 X 2.65	59.08	10.25	62.23	1.98	1.05	6.07	2.20	6.500	.160	5.000	.250	1.14	117.3
7 X 2.75	64.88	11.20	72.85	2.13	1.12	6.50	2.34	7.000	.160	5.000	.250	1.22	115.8
8 X 3.10	70.78	12.68	87.40	2.31	1.23	6.89	2.54	7.500	.190	5.000	.250	1.54	114.5
8 X 3.21	76.61	13.75	100.58	2.48	1.31	7.31	2.74	8.000	.190	5.000	.250	1.64	113.3
6 X 3.28	58.88	12.68	70.03	2.06	1.19	5.44	2.80	6.000	.160	6.000	.313	1.06	148.0
7 X 3.38	64.94	14.11	82.01	2.23	1.27	5.85	2.88	6.500	.160	6.000	.313	1.14	145.6
7 X 3.47	71.03	15.37	96.34	2.41	1.36	6.27	2.96	7.000	.160	6.000	.313	1.22	143.5
8 X 3.82	77.02	17.12	113.82	2.59	1.48	6.65	3.26	7.500	.190	6.000	.313	1.54	141.8
8 X 3.94	83.10	18.49	130.45	2.77	1.57	7.06	3.35	8.000	.190	6.000	.313	1.64	140.2
9 X 4.34	89.06	20.49	152.01	2.96	1.71	7.42	3.70	8.500	.220	6.000	.313	2.01	138.7
9 X 4.47	95.13	21.99	171.89	3.14	1.81	7.82	3.81	9.000	.220	6.000	.313	2.12	137.4
10 X 4.60	101.20	23.51	193.19	3.31	1.91	8.22	3.92	9.500	.220	6.000	.313	2.23	136.2
9 X 4.76	91.06	23.31	169.57	3.09	1.89	7.28	4.06	8.500	.220	6.000	.375	2.01	138.7
9 X 4.89	97.84	24.97	191.50	3.28	1.96	7.67	4.17	9.000	.220	6.000	.375	2.12	137.4
10 X 5.02	104.63	26.67	214.94	3.46	2.07	8.06	4.28	9.500	.220	6.000	.375	2.23	136.2
9 X 5.42	99.23	27.91	196.95	3.28	2.07	7.06	4.62	8.500	.220	7.500	.375	2.01	180.4
10 X 5.50	110.02	29.20	245.17	3.65	2.23	8.40	4.58	10.000	.250	5.000	.375	2.06	135.0
9 X 5.55	101.50	29.64	222.01	3.47	2.19	7.44	4.73	9.000	.220	7.500	.375	2.12	178.5
11 X 5.64	110.19	31.04	272.50	3.84	2.35	8.78	4.81	10.500	.250	6.000	.375	2.78	134.0
10 X 5.66	107.68	31.81	248.73	3.67	2.31	7.82	4.84	9.500	.220	7.500	.375	2.23	176.8
11 X 5.79	122.36	32.91	301.50	4.03	2.46	9.16	4.93	11.000	.250	6.000	.375	2.91	132.9

35T EFFECTIVE WIDTH

.625 IN. PLATE (AREA=13.67 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	112.38	32.50	267.83	3.78	2.38	8.24	5.05	10.000	.250	5.000	.438	2.66	135.0
11 X 6.37	110.05	34.51	297.40	3.97	2.51	8.62	5.17	10.500	.250	5.000	.438	2.78	134.0
10 X 6.16	114.02	34.59	281.95	3.86	2.47	8.15	5.25	10.000	.250	7.500	.375	2.66	175.2
11 X 6.21	124.92	36.55	328.72	4.16	2.63	8.99	5.30	11.000	.250	5.000	.438	2.91	132.9
11 X 6.36	126.33	38.09	312.80	4.05	2.68	8.53	5.37	10.500	.250	7.500	.375	2.78	173.8
11 X 6.45	126.65	38.83	345.46	4.25	2.73	8.90	5.50	11.000	.250	7.500	.375	2.91	172.4
12 X 7.36	137.16	43.03	413.55	4.55	3.02	9.61	6.29	12.000	.313	6.000	.438	3.95	131.0
13 X 7.20	143.43	45.37	452.39	4.74	3.15	9.97	6.45	12.500	.313	6.000	.438	4.11	130.1
12 X 7.62	139.00	45.52	452.95	4.63	3.11	9.51	6.49	12.000	.313	7.500	.375	3.95	169.9
13 X 7.80	145.33	47.96	473.26	4.83	3.26	9.87	6.65	12.500	.313	7.500	.375	4.11	168.8
13 X 7.96	145.76	49.32	488.66	4.80	3.32	9.81	6.80	12.500	.313	8.000	.500	4.11	130.1
13 X 7.99	151.66	50.43	515.03	5.02	3.40	10.23	6.81	13.000	.313	7.500	.375	4.26	167.7
13 X 8.10	152.14	51.86	526.94	5.05	3.46	10.16	6.95	13.000	.313	8.000	.500	4.26	129.2
14 X 8.17	158.30	52.94	560.10	5.21	3.54	10.58	6.96	13.500	.313	7.500	.375	4.42	166.7
14 X 8.65	158.52	54.44	572.35	5.25	3.61	10.21	7.11	13.500	.313	8.000	.500	4.42	128.4
12 X 8.41	142.94	52.91	467.54	4.84	3.41	9.21	7.16	12.000	.313	8.000	.438	3.95	163.2
13 X 8.39	149.42	55.65	536.22	5.04	3.56	9.56	7.32	12.500	.313	8.000	.438	4.11	182.0
13 X 8.78	155.91	56.43	579.10	5.23	3.71	9.91	7.48	13.000	.313	8.000	.438	4.26	180.8
14 X 8.96	162.41	61.25	628.23	5.43	3.87	10.26	7.63	13.500	.313	8.000	.438	4.42	179.7
12 X 8.97	145.05	58.01	523.15	4.95	3.61	9.02	7.64	12.000	.313	8.000	.500	3.95	183.2
13 X 9.15	151.63	60.97	570.75	5.16	3.76	9.36	7.80	12.500	.313	8.000	.500	4.11	182.0
13 X 9.34	158.21	63.97	620.62	5.36	3.92	9.70	7.95	13.000	.313	8.000	.500	4.26	180.8
14 X 9.32	164.68	67.00	672.86	5.56	4.08	10.04	8.11	13.500	.313	8.000	.500	4.42	179.7

35T EFFECTIVE WIDTH

.750 IN. PLATE (AREA=19.69 SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.51	.95	1.02	.23	.41	1.84	.43	1.500	.125	2.000	.125	.28	53.2
2 X .58	4.23	.76	1.77	.30	.42	2.33	.49	2.000	.125	2.000	.125	.34	49.3
3 X .65	6.41	.98	2.77	.37	.43	2.82	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	9.07	1.23	4.06	.45	.45	3.30	.62	3.000	.125	2.000	.125	.47	45.8
3 X .72	7.36	1.16	3.25	.40	.44	2.81	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	10.30	1.43	4.72	.48	.46	3.29	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	13.72	1.73	6.53	.57	.48	3.77	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	17.58	2.05	8.71	.65	.50	4.25	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	21.86	2.39	11.29	.74	.52	4.73	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	20.53	2.74	14.29	.83	.54	5.21	.93	5.000	.125	2.500	.125	.72	54.6
4 X 1.13	21.79	2.72	11.49	.75	.53	4.22	.97	4.000	.125	3.000	.160	.59	70.1
6 X 1.16	31.56	3.12	17.75	.93	.56	5.09	.99	5.000	.125	2.500	.125	.78	53.7
5 X 1.21	26.68	3.14	14.75	.84	.55	4.70	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	31.97	3.58	18.50	.94	.58	5.17	1.09	5.000	.125	3.000	.160	.72	67.5
6 X 1.35	37.59	4.04	22.76	1.05	.61	5.64	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.60	29.60	4.61	17.89	.92	.60	4.15	1.36	4.000	.125	4.000	.220	.59	96.7
5 X 1.67	35.05	4.93	22.73	1.04	.64	4.61	1.42	4.500	.125	4.000	.220	.66	90.4
6 X 1.67	42.20	4.94	30.06	1.19	.66	6.09	1.43	6.000	.160	3.000	.160	1.08	65.5
5 X 1.74	42.02	5.56	28.23	1.15	.67	5.08	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	51.65	5.51	36.09	1.30	.70	6.55	1.51	6.500	.160	3.000	.160	1.16	64.6
5 X 1.82	46.09	6.21	34.43	1.27	.71	5.54	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.86	58.25	6.10	42.82	1.42	.74	7.01	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	50.93	6.83	36.39	1.31	.71	6.04	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.98	57.71	6.69	43.45	1.43	.75	6.50	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	64.08	7.37	51.26	1.55	.79	6.96	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	56.46	7.29	43.59	1.42	.77	5.98	1.82	6.000	.160	4.000	.220	1.08	91.6
7 X 2.22	63.01	8.05	51.62	1.55	.81	6.44	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	70.92	8.84	60.91	1.68	.86	6.89	1.98	7.000	.160	4.000	.220	1.24	89.3
6 X 2.56	64.13	9.48	55.74	1.60	.87	5.86	2.18	6.000	.160	5.000	.250	1.08	119.0
7 X 2.65	71.70	10.42	65.96	1.73	.92	6.33	2.26	6.500	.160	5.000	.250	1.16	117.3
7 X 2.75	79.52	11.38	77.18	1.87	.97	6.78	2.34	7.000	.160	5.000	.250	1.24	115.8
8 X 3.10	87.88	12.90	92.80	2.04	1.06	7.19	2.64	7.500	.190	5.000	.250	1.57	114.5
8 X 3.21	99.83	13.99	106.79	2.18	1.11	7.64	2.74	8.000	.190	5.000	.250	1.66	113.3
6 X 3.26	73.18	13.10	79.01	1.83	1.02	5.73	2.80	6.000	.160	5.000	.313	1.08	148.0
7 X 3.36	81.37	14.35	88.41	1.98	1.09	6.16	2.88	6.500	.160	5.000	.313	1.16	145.6
7 X 3.47	89.04	15.61	103.05	2.13	1.15	6.60	2.96	7.000	.160	6.000	.313	1.24	143.5
8 X 3.82	98.09	17.41	121.97	2.31	1.24	7.01	3.26	7.500	.190	6.000	.313	1.57	141.8
8 X 3.94	106.47	18.79	139.78	2.46	1.31	7.44	3.35	8.000	.190	6.000	.313	1.66	140.2
9 X 4.34	114.95	20.85	163.25	2.64	1.42	7.83	3.70	8.500	.220	6.000	.313	2.04	138.7
9 X 4.47	123.37	22.37	184.63	2.80	1.50	8.25	3.81	9.000	.220	6.000	.313	2.15	137.4
10 X 4.60	131.81	23.92	207.55	2.97	1.57	8.68	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	119.37	25.72	183.02	2.78	1.53	7.72	4.06	8.500	.220	6.000	.375	2.04	138.7
9 X 4.89	127.95	25.41	200.70	2.94	1.62	8.13	4.17	9.000	.220	6.000	.375	2.15	137.4
10 X 5.02	136.55	27.14	232.04	3.11	1.70	8.55	4.28	9.500	.220	6.000	.375	2.26	136.2
9 X 5.42	125.42	28.40	214.17	2.97	1.71	7.54	4.62	8.500	.220	7.500	.375	2.04	180.4
10 X 5.56	145.05	29.75	265.36	3.30	1.83	8.92	4.68	10.000	.250	6.000	.375	2.69	135.0
9 X 5.55	134.21	30.36	241.41	3.14	1.80	7.95	4.73	9.000	.220	7.500	.375	2.15	178.5
11 X 5.64	153.65	31.02	295.04	3.47	1.92	9.33	4.81	10.500	.250	6.000	.375	2.01	134.0
10 X 5.66	143.02	32.36	270.48	3.32	1.89	8.36	4.84	9.500	.220	7.500	.375	2.26	176.8
11 X 5.79	162.24	33.94	320.55	3.64	2.01	9.74	4.93	11.000	.250	6.000	.375	2.94	132.9

35T EFFECTIVE WIDTH

.750 IN. PLATE (AREA=19.69 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	149.02	33.11	291.21	3.43	1.95	8.80	5.05	10.000	.250	5.000	.438	2.69	135.0
11 X 6.07	157.74	35.16	323.45	3.61	2.05	9.20	5.17	10.500	.250	5.000	.438	2.81	134.0
10 X 6.16	151.63	35.23	307.29	3.51	2.03	8.72	5.25	10.000	.250	7.500	.375	2.69	175.2
11 X 6.21	166.47	37.25	357.62	3.78	2.15	9.60	5.30	11.000	.250	6.000	.438	2.94	132.9
11 X 6.30	160.42	37.37	341.00	3.69	2.13	9.12	5.37	10.500	.250	7.500	.375	2.81	173.8
11 X 6.45	169.21	39.55	370.71	3.87	2.23	9.52	5.50	11.000	.250	7.500	.375	2.94	172.4
12 X 7.38	183.48	43.39	452.42	4.17	2.47	10.28	6.29	12.000	.313	6.000	.438	3.99	131.0
13 X 7.50	192.17	40.39	499.10	4.35	2.28	10.87	6.45	12.500	.313	6.000	.438	4.15	130.1
12 X 7.62	186.36	46.52	474.65	4.26	2.55	10.20	6.49	12.000	.313	7.500	.375	3.99	169.9
13 X 7.80	195.06	49.02	519.07	4.44	2.66	10.59	6.65	12.500	.313	7.500	.375	4.15	168.8
13 X 7.98	199.67	50.43	551.37	4.48	2.71	10.54	6.80	12.500	.313	6.000	.500	4.15	130.1
13 X 7.99	203.81	51.56	565.62	4.62	2.76	10.97	6.81	13.000	.313	7.500	.375	4.30	167.7
13 X 8.16	204.68	53.04	579.18	4.66	2.83	10.92	6.95	13.000	.313	6.000	.500	4.30	129.2
14 X 8.17	212.56	54.14	614.92	4.80	2.89	11.36	6.96	13.500	.313	7.500	.375	4.46	166.7
14 X 8.35	213.48	55.09	629.39	4.85	2.95	11.30	7.11	13.500	.313	6.000	.500	4.46	128.4
12 X 8.41	192.00	54.07	538.27	4.46	2.79	9.96	7.16	12.000	.313	8.000	.438	3.99	183.2
13 X 8.59	201.55	56.58	587.79	4.67	2.92	10.33	7.32	12.500	.313	8.000	.438	4.15	182.0
13 X 8.78	210.50	59.74	639.81	4.89	3.04	10.71	7.48	13.000	.313	8.000	.438	4.30	180.8
14 X 8.96	219.45	62.63	694.36	5.04	3.16	11.09	7.63	13.500	.313	8.000	.438	4.46	179.7
12 X 8.97	196.05	59.29	560.38	4.61	2.96	9.79	7.64	12.000	.313	8.000	.500	3.99	183.2
13 X 9.15	205.12	62.32	613.34	4.80	3.09	10.16	7.80	12.500	.313	8.000	.500	4.15	182.0
13 X 9.34	214.19	65.40	668.91	4.99	3.22	10.53	7.95	13.000	.313	8.000	.500	4.30	180.8
14 X 9.52	223.27	68.52	747.13	5.18	3.35	10.90	8.11	13.500	.313	8.000	.500	4.46	179.7

35T EFFECTIVE WIDTH

.875 IN. PLATE (AREA=26.80 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.40	.58	1.11	.20	.46	1.91	.43	1.500	.125	2.000	.125	.30	53.2
2 X .56	4.01	.79	1.89	.26	.47	2.40	.49	2.000	.125	2.000	.125	.36	49.3
3 X .65	6.10	1.02	2.94	.33	.48	2.89	.55	2.500	.125	2.000	.125	.42	47.3
3 X .72	8.07	1.26	4.27	.39	.49	3.38	.62	3.000	.125	2.000	.125	.48	45.8
3 X .72	7.04	1.19	3.44	.35	.49	2.89	.62	2.500	.125	2.500	.125	.42	61.7
3 X .80	9.92	1.47	4.90	.42	.50	3.37	.68	3.000	.125	2.500	.125	.48	59.5
4 X .87	13.30	1.77	8.04	.50	.51	3.86	.74	3.500	.125	2.500	.125	.55	57.9
4 X .94	17.19	2.09	9.09	.57	.53	4.35	.80	4.000	.125	2.500	.125	.61	56.6
5 X 1.02	21.56	2.43	11.75	.65	.54	4.83	.87	4.500	.125	2.500	.125	.67	55.6
5 X 1.09	26.45	2.79	14.35	.73	.56	5.31	.93	5.000	.125	2.500	.125	.73	54.6
4 X 1.13	21.07	2.78	12.00	.66	.55	4.32	.97	4.000	.125	3.000	.160	.61	70.1
5 X 1.10	31.78	3.18	18.41	.81	.58	5.80	.99	5.500	.125	2.500	.125	.80	53.7
5 X 1.21	26.85	3.20	15.36	.74	.57	4.80	1.03	4.500	.125	3.000	.160	.67	68.7
5 X 1.28	32.31	3.64	19.24	.83	.59	5.28	1.09	5.000	.125	3.000	.160	.73	67.5
5 X 1.35	38.02	4.10	23.65	.92	.61	5.76	1.15	5.500	.125	3.000	.160	.80	66.5
4 X 1.50	30.04	4.40	16.75	.82	.61	4.26	1.30	4.000	.125	4.000	.220	.61	98.7
5 X 1.67	37.30	5.01	23.76	.92	.64	4.74	1.42	4.500	.125	4.000	.220	.67	90.4
5 X 1.67	47.25	5.02	31.23	1.05	.66	6.22	1.43	6.000	.160	3.000	.160	1.10	65.5
5 X 1.74	44.42	5.05	29.45	1.02	.66	5.21	1.48	5.000	.125	4.000	.220	.73	94.5
7 X 1.77	54.84	5.60	37.46	1.15	.68	6.69	1.51	6.500	.160	3.000	.160	1.18	64.6
6 X 1.82	51.96	6.31	35.86	1.12	.69	5.68	1.55	5.500	.125	4.000	.220	.80	93.0
7 X 1.86	62.49	6.20	44.42	1.25	.71	7.16	1.59	7.000	.160	3.000	.160	1.26	63.8
6 X 1.38	54.44	6.15	37.86	1.15	.70	6.18	1.61	6.000	.100	3.500	.190	1.10	78.4
7 X 1.96	62.32	6.79	45.17	1.26	.72	6.65	1.69	6.500	.100	3.500	.190	1.18	77.4
7 X 2.07	70.54	7.46	53.27	1.37	.76	7.12	1.77	7.000	.160	3.500	.190	1.26	76.4
6 X 2.13	61.42	7.41	45.43	1.26	.74	6.14	1.82	6.000	.160	4.000	.220	1.10	91.6
7 X 2.22	69.88	8.17	53.97	1.37	.77	6.00	1.90	6.500	.160	4.000	.220	1.18	90.4
7 X 2.32	78.04	8.97	63.39	1.48	.81	7.07	1.98	7.000	.160	4.000	.220	1.26	89.3
6 X 2.56	71.54	9.62	58.31	1.42	.82	6.06	2.18	6.000	.100	5.000	.250	1.10	119.0
7 X 2.65	80.79	10.57	68.94	1.54	.85	6.92	2.26	6.500	.160	5.000	.250	1.18	117.3
7 X 2.75	90.29	11.54	80.00	1.66	.89	6.98	2.34	7.000	.100	5.000	.250	1.26	115.8
8 X 3.10	101.15	13.09	97.04	1.82	.96	7.42	2.64	7.500	.190	5.000	.250	1.59	114.5
8 X 3.21	111.12	14.18	111.63	1.94	1.00	7.87	2.74	8.000	.190	5.000	.250	1.69	113.3
6 X 3.28	84.25	13.30	78.95	1.63	.94	5.94	2.80	6.000	.160	6.000	.313	1.10	148.0
7 X 3.38	94.43	14.35	92.97	1.77	.98	6.39	2.88	6.500	.100	6.000	.313	1.18	145.6
7 X 3.47	104.81	15.83	108.29	1.91	1.03	6.84	2.96	7.000	.160	6.000	.313	1.26	143.5
8 X 3.82	115.88	17.55	126.30	2.07	1.11	7.27	3.26	7.500	.190	6.000	.313	1.59	141.8
8 X 3.94	126.90	19.05	146.97	2.21	1.16	7.71	3.35	8.000	.190	6.000	.313	1.69	140.2
9 X 4.34	137.92	21.15	171.90	2.37	1.25	8.13	3.70	8.500	.220	6.000	.313	2.06	138.7
9 X 4.47	148.83	22.89	194.39	2.52	1.31	8.57	3.81	9.000	.220	6.000	.313	2.17	137.4
10 X 4.60	159.82	24.26	218.51	2.67	1.37	9.01	3.92	9.500	.220	6.000	.313	2.28	136.2
9 X 4.76	144.65	24.05	193.36	2.50	1.34	8.04	4.06	8.500	.220	6.000	.375	2.06	138.7
9 X 4.89	155.81	25.77	216.34	2.66	1.40	8.47	4.17	9.000	.220	6.000	.375	2.17	137.4
10 X 5.02	167.05	27.51	240.38	2.81	1.47	8.91	4.28	9.500	.220	6.000	.375	2.28	136.2
9 X 5.42	193.91	28.79	227.40	2.69	1.48	7.90	4.62	8.500	.220	7.500	.375	2.06	180.4
10 X 5.58	176.57	30.16	266.76	2.99	1.57	9.30	4.68	10.000	.250	6.000	.375	2.72	135.0
9 X 5.75	185.42	30.78	256.26	2.85	1.55	8.33	4.73	9.000	.220	7.500	.375	2.17	170.5
11 X 5.84	189.88	32.09	312.22	3.14	1.64	9.73	4.81	10.500	.250	6.000	.375	2.84	134.0
10 X 5.88	170.97	32.80	287.10	3.01	1.62	8.75	4.84	9.500	.220	7.500	.375	2.28	176.8
11 X 5.79	201.21	34.03	345.62	3.30	1.72	10.16	4.93	11.000	.250	6.000	.375	2.97	132.9

35T EFFECTIVE WIDTH

.875 IN. PLATE (AREA=26.80 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	184.69	33.59	309.11	3.12	1.67	9.20	5.05	10.000	.250	5.000	.438	2.72	135.0
11 X 6.07	196.19	35.67	343.54	3.26	1.75	9.62	5.17	10.500	.250	5.000	.438	2.84	134.0
10 X 6.16	188.57	35.73	326.69	3.19	1.73	9.14	5.25	10.000	.250	7.500	.375	2.72	175.2
11 X 6.21	207.71	37.79	379.66	3.44	1.83	10.05	5.30	11.000	.250	6.000	.438	2.97	132.9
11 X 6.30	200.16	37.91	362.55	3.36	1.81	9.56	5.37	10.500	.250	7.500	.375	2.84	173.8
11 X 6.45	211.77	40.12	400.56	3.52	1.89	9.98	5.50	11.000	.250	7.500	.375	2.97	172.4
12 X 7.36	230.75	44.72	482.33	3.82	2.09	10.78	6.29	12.000	.313	6.000	.438	4.03	131.0
13 X 7.56	242.25	47.17	528.06	3.99	2.18	11.20	6.49	12.500	.313	6.000	.438	4.19	130.1
12 X 7.62	234.80	47.29	506.77	3.90	2.16	10.72	6.49	12.000	.313	7.500	.375	4.03	169.9
13 X 7.80	246.45	49.83	554.37	4.07	2.25	11.13	6.65	12.500	.313	7.500	.375	4.19	168.8
13 X 7.98	247.07	51.27	566.18	4.11	2.29	11.08	6.80	12.500	.313	8.000	.500	4.19	130.1
13 X 7.99	258.04	52.42	604.49	4.24	2.34	11.53	6.81	13.000	.313	7.500	.375	4.34	167.7
13 X 8.16	259.49	53.93	619.50	4.28	2.39	11.49	6.95	13.000	.313	8.000	.500	4.34	129.2
14 X 8.17	269.63	55.65	657.17	4.41	2.44	11.94	6.96	13.500	.313	7.500	.375	4.50	166.7
14 X 8.35	271.15	56.63	675.41	4.46	2.46	11.89	7.11	13.500	.313	8.000	.500	4.50	128.4
12 X 8.41	244.42	54.95	577.00	4.12	2.36	10.91	7.16	12.000	.313	8.000	.438	4.03	183.2
13 X 8.59	250.29	57.81	638.89	4.30	2.46	10.91	7.32	12.500	.313	8.000	.438	4.19	182.0
13 X 8.78	268.09	60.72	686.90	4.48	2.56	11.51	7.48	13.000	.313	8.000	.438	4.34	180.8
14 X 8.96	279.93	63.67	745.06	4.65	2.66	11.71	7.63	13.500	.313	8.000	.438	4.50	179.7
12 X 8.97	249.70	59.25	624.97	4.26	2.58	10.37	7.54	12.000	.313	8.000	.500	4.03	183.2
13 X 9.15	261.75	63.34	682.13	4.44	2.61	10.77	7.80	12.500	.313	8.000	.500	4.19	182.0
13 X 9.34	273.74	66.48	742.14	4.62	2.71	11.16	7.95	13.000	.313	8.000	.500	4.34	180.8
14 X 9.52	285.74	69.66	805.05	4.80	2.82	11.56	8.11	13.500	.313	8.000	.500	4.50	179.7

35T EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=35.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.30	.60	1.19	.16	.52	1.98	.43	1.500	.125	2.000	.125	.31	53.2
2 X .56	3.02	.81	2.01	.24	.53	2.47	.49	2.000	.125	2.000	.125	.38	49.3
3 X .65	5.80	1.05	3.10	.30	.53	2.97	.55	2.500	.125	2.000	.125	.44	47.3
3 X .72	8.25	1.30	4.48	.35	.54	3.46	.62	3.000	.125	2.000	.125	.50	45.6
3 X .72	8.71	1.22	3.62	.32	.54	2.90	.62	2.500	.125	2.500	.125	.44	61.7
3 X .80	9.46	1.51	5.20	.38	.55	3.45	.68	3.000	.125	2.500	.125	.50	59.5
4 X .87	12.73	1.81	7.13	.45	.56	3.94	.74	3.500	.125	2.500	.125	.56	57.9
4 X .94	10.53	2.13	9.45	.51	.57	4.43	.80	4.000	.125	2.500	.125	.63	56.6
5 X 1.02	20.87	2.48	12.19	.58	.58	4.92	.87	4.500	.125	2.500	.125	.69	55.6
5 X 1.09	25.73	2.84	15.37	.65	.60	5.40	.93	5.000	.125	2.500	.125	.75	54.6
4 X 1.13	21.10	2.83	12.48	.59	.59	4.41	.97	4.000	.125	3.000	.160	.63	76.1
6 X 1.16	31.12	3.23	19.02	.75	.61	5.89	.99	5.000	.125	2.500	.125	.81	53.7
5 X 1.21	26.31	3.26	15.94	.67	.61	4.89	1.03	4.500	.125	3.000	.160	.69	66.7
5 X 1.26	32.00	3.70	19.91	.74	.62	5.38	1.09	5.000	.125	3.000	.160	.75	67.5
6 X 1.35	36.35	4.17	24.44	.82	.64	5.86	1.15	5.500	.125	3.000	.160	.81	66.5
4 X 1.60	30.65	4.48	19.54	.73	.64	4.36	1.36	4.000	.125	4.000	.220	.63	98.7
5 X 1.67	37.56	5.10	24.69	.82	.66	4.84	1.42	4.500	.125	4.000	.220	.69	96.4
6 X 1.67	48.02	5.10	32.29	.94	.67	6.33	1.43	6.000	.160	3.000	.160	1.12	65.5
5 X 1.74	45.10	5.74	30.55	.92	.68	5.32	1.48	5.000	.125	4.000	.220	.75	94.5
7 X 1.77	55.82	5.68	38.69	1.03	.69	6.81	1.51	6.500	.160	3.000	.160	1.20	64.6
6 X 1.82	53.15	6.40	37.13	1.01	.70	5.80	1.55	5.500	.125	4.000	.220	.81	93.0
7 X 1.86	64.12	6.29	45.83	1.12	.71	7.29	1.59	7.000	.160	3.000	.160	1.28	63.8
6 X 1.98	65.72	8.22	39.17	1.03	.70	6.30	1.61	6.000	.160	3.500	.190	1.12	78.4
7 X 1.98	64.30	6.89	46.67	1.13	.73	6.77	1.59	6.500	.160	3.500	.190	1.20	77.4
7 X 2.07	73.30	7.59	55.00	1.22	.75	7.25	1.77	7.000	.160	3.500	.190	1.28	76.4
6 X 2.13	63.76	7.91	47.05	1.13	.74	6.26	1.82	6.000	.160	4.000	.220	1.12	91.6
7 X 2.22	73.12	8.29	55.83	1.23	.76	6.74	1.90	6.500	.160	4.000	.220	1.20	90.4
7 X 2.32	82.93	9.09	65.52	1.33	.79	7.21	1.98	7.000	.160	4.000	.220	1.28	89.3
8 X 2.56	75.84	9.76	80.52	1.28	.80	6.20	2.18	6.000	.160	5.000	.250	1.12	119.0
7 X 2.65	86.31	10.71	71.47	1.38	.83	6.67	2.26	6.500	.160	5.000	.250	1.20	117.3
7 X 2.75	97.19	11.69	83.49	1.50	.86	7.14	2.34	7.000	.160	5.000	.250	1.28	115.8
8 X 3.10	110.22	13.26	100.59	1.63	.91	7.59	2.64	7.500	.190	5.000	.250	1.62	114.5
8 X 3.21	121.95	14.36	115.65	1.75	.95	8.05	2.74	8.000	.190	5.000	.250	1.71	113.3
8 X 3.26	91.85	13.46	82.28	1.48	.90	6.16	2.86	6.000	.160	5.000	.313	1.12	148.0
7 X 3.38	103.70	14.74	98.78	1.60	.93	6.57	2.88	6.500	.160	5.000	.313	1.20	145.6
7 X 3.47	115.89	16.02	112.62	1.72	.97	7.03	2.96	7.000	.160	5.000	.313	1.28	143.5
8 X 3.62	129.44	17.87	133.56	1.87	1.03	7.47	3.26	7.500	.190	5.000	.313	1.62	141.8
8 X 3.94	142.29	19.28	152.84	2.00	1.07	7.93	3.35	8.000	.190	5.000	.313	1.71	140.2
9 X 4.34	156.51	21.41	176.93	2.15	1.14	8.36	3.70	8.500	.220	5.000	.313	2.09	138.7
9 X 4.47	169.04	22.96	202.26	2.28	1.19	8.81	3.81	9.000	.220	5.000	.313	2.20	137.4
10 X 4.66	183.34	24.55	227.32	2.42	1.24	9.26	3.92	9.500	.220	5.000	.313	2.31	136.2
9 X 4.70	185.77	24.35	201.72	2.27	1.22	8.28	4.06	8.500	.220	5.000	.375	2.09	138.7
9 X 4.89	179.52	26.08	227.72	2.41	1.27	8.73	4.17	9.000	.220	5.000	.375	2.20	137.4
10 X 5.02	193.41	27.84	255.54	2.55	1.32	9.16	4.28	9.500	.220	5.000	.375	2.31	136.2
9 X 5.42	176.75	29.14	236.06	2.45	1.33	8.17	4.62	8.500	.220	7.500	.375	2.09	160.4
10 X 5.50	208.26	30.56	293.11	2.72	1.41	9.59	4.68	10.000	.220	5.000	.375	2.75	135.0
9 X 5.55	193.31	31.15	268.20	2.60	1.39	8.61	4.73	9.000	.220	7.500	.375	2.20	178.5
11 X 5.84	222.39	32.48	325.91	2.80	1.47	10.03	4.81	10.500	.250	5.000	.375	2.68	134.0
10 X 5.88	207.40	33.18	300.37	2.75	1.45	9.05	4.84	9.500	.220	7.500	.375	2.31	176.8
11 X 5.79	236.01	34.44	360.77	3.01	1.52	10.48	4.93	11.000	.250	6.000	.375	3.00	132.9

35T EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=35.00 SQ. IN.)

NOM. W		LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10	X	9.92	216.95	34.01	323.39	2.84	1.49	9.51	5.85	10.000	.250	5.000	.438	2.75	135.0
11	X	8.87	231.37	36.11	359.17	2.99	1.55	9.95	5.17	10.500	.250	5.000	.438	2.68	134.0
10	X	8.16	222.34	36.17	342.17	2.92	1.54	9.46	5.25	10.000	.250	7.500	.375	2.75	175.2
11	X	8.21	249.87	38.24	397.14	3.14	1.62	10.38	5.30	11.000	.250	5.000	.438	3.00	132.9
11	X	8.30	236.90	38.36	379.09	3.07	1.58	9.90	5.37	10.500	.250	7.500	.375	2.88	173.8
11	X	8.45	251.53	40.66	419.47	3.22	1.67	10.33	5.50	11.000	.250	7.500	.375	3.00	172.4
12	X	7.38	276.02	43.52	500.09	3.50	1.83	11.17	6.29	12.000	.313	6.000	.438	4.07	131.0
13	X	7.56	290.05	47.80	554.17	3.66	1.91	11.09	6.45	12.500	.313	6.000	.438	4.23	130.1
12	X	7.62	281.71	47.91	532.30	3.58	1.89	11.11	6.49	12.000	.313	7.500	.375	4.07	169.9
13	X	7.80	296.43	50.49	582.38	3.74	1.96	11.54	6.65	12.500	.313	7.500	.375	4.23	168.0
13	X	7.35	298.00	51.55	597.41	3.78	2.00	11.50	6.80	12.500	.313	8.000	.500	4.23	130.1
13	X	7.99	321.18	53.11	665.14	3.90	2.04	11.96	6.81	13.000	.313	7.500	.375	4.38	167.7
13	X	8.10	313.43	54.65	651.40	3.94	2.08	11.92	6.99	13.000	.313	8.000	.500	4.38	129.2
14	X	8.17	325.94	55.78	690.61	4.05	2.12	12.38	6.96	13.500	.313	7.500	.375	4.54	166.7
14	X	8.55	328.28	57.39	708.29	4.10	2.16	12.34	7.11	13.500	.313	8.000	.500	4.54	128.4
12	X	8.41	295.41	55.06	608.90	3.80	2.06	10.94	7.16	12.000	.313	8.000	.438	4.07	183.2
13	X	8.59	310.46	58.56	665.15	3.90	2.14	11.36	7.32	12.500	.313	8.000	.438	4.23	182.0
13	X	8.78	325.54	61.91	724.29	4.13	2.22	11.78	7.48	13.000	.313	8.000	.438	4.38	180.8
14	X	8.96	340.02	64.50	786.38	4.29	2.31	12.19	7.63	13.500	.313	8.000	.438	4.54	179.7
12	X	8.97	303.22	61.64	668.53	3.94	2.18	10.82	7.54	12.000	.313	8.000	.500	4.07	183.2
13	X	9.15	318.49	64.17	721.00	4.10	2.26	11.24	7.80	12.500	.313	8.000	.500	4.23	182.0
13	X	9.34	333.76	67.34	784.51	4.27	2.35	11.65	7.95	13.000	.313	8.000	.500	4.38	180.8
14	X	9.52	349.05	70.56	851.12	4.44	2.44	12.06	8.11	13.500	.313	8.000	.500	4.54	179.7

TABLE 2

EFFECTIVE PLATING WIDTH = 8"

1/4" -1" PLATE THICKNESSES

MAX FLANGE WIDTH = 4"

8.0 IN. EFFECTIVE WIDTH

.250 IN. PLATE (AREA= 2.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	1.85	.45	.63	.51	.34	1.41	.48	1.500	.125	2.000	.125	.22	53.2
2 X .58	2.08	.64	1.16	.68	.43	1.82	.49	2.000	.125	2.000	.125	.28	49.3
3 X .65	3.54	.84	1.80	.80	.53	2.22	.55	2.500	.125	2.000	.125	.34	47.3
3 X .72	4.41	1.37	2.79	1.03	.63	2.62	.62	3.000	.125	2.000	.125	.41	45.8
3 X .72	3.72	1.00	2.16	.91	.58	2.17	.62	2.500	.125	2.500	.125	.34	61.7
3 X .80	4.60	1.25	3.19	1.09	.69	2.56	.68	3.000	.125	2.500	.125	.41	59.5
4 X .87	5.50	1.52	4.46	1.28	.81	2.94	.74	3.500	.125	2.500	.125	.47	57.9
4 X .94	6.39	1.81	5.98	1.46	.94	3.31	.80	4.000	.125	2.500	.125	.53	56.6
5 X 1.02	7.29	2.11	7.77	1.65	1.07	3.68	.87	4.500	.125	2.500	.125	.59	55.6
5 X 1.09	8.19	2.43	9.84	1.83	1.20	4.05	.93	5.000	.125	2.500	.125	.66	54.6
4 X 1.13	6.80	2.41	7.56	1.60	1.11	3.14	.97	4.000	.125	3.000	.160	.53	70.1
5 X 1.16	9.09	2.76	12.19	2.02	1.34	4.41	.99	5.000	.125	2.500	.125	.72	53.7
5 X 1.21	7.74	2.79	9.74	1.79	1.26	3.49	1.03	4.500	.125	3.000	.160	.59	66.7
5 X 1.28	8.08	3.18	12.23	1.99	1.41	3.84	1.09	5.000	.125	3.000	.160	.66	67.5
5 X 1.35	9.62	3.59	15.05	2.18	1.56	4.19	1.15	5.500	.125	3.000	.160	.72	66.5
4 X 1.60	7.29	3.83	10.67	1.78	1.46	2.79	1.36	4.000	.125	4.000	.220	.53	98.7
5 X 1.67	8.29	4.39	13.63	2.00	1.64	3.11	1.42	4.500	.125	4.000	.220	.59	96.4
5 X 1.67	10.61	4.32	19.19	2.37	1.81	4.44	1.43	6.000	.160	3.000	.160	1.00	65.5
5 X 1.74	9.30	4.96	16.99	2.21	1.83	3.42	1.48	5.000	.125	4.000	.220	.66	94.5
7 X 1.77	11.58	4.81	22.94	2.56	1.98	4.77	1.51	6.500	.160	3.000	.160	1.08	64.6
5 X 1.82	10.31	5.55	20.75	2.42	2.01	3.74	1.55	5.500	.125	4.000	.220	.72	93.0
7 X 1.86	12.56	5.32	27.09	2.75	2.16	5.09	1.59	7.000	.160	3.000	.160	1.16	63.8
5 X 1.88	11.05	5.29	22.36	2.49	2.02	4.23	1.61	6.000	.160	3.500	.190	1.00	78.4
7 X 1.98	12.96	5.86	26.63	2.69	2.21	4.54	1.69	6.500	.160	3.500	.190	1.08	77.4
7 X 2.07	13.88	6.45	31.31	2.88	2.39	4.86	1.77	7.000	.160	3.500	.190	1.16	76.4
5 X 2.13	11.41	6.41	25.65	2.59	2.25	4.00	1.82	6.000	.160	4.000	.220	1.00	91.6
7 X 2.22	12.45	7.07	30.45	2.80	2.45	4.30	1.90	6.500	.160	4.000	.220	1.08	90.4
7 X 2.32	13.51	7.75	35.71	3.00	2.64	4.61	1.98	7.000	.160	4.000	.220	1.16	89.3

8.0 IN. EFFECTIVE WIDTH

.313 IN. PLATE (AREA= 2.50 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.00	.46	.68	.48	.34	1.47	.43	1.500	.125	2.000	.125	.23	53.2
2 X .58	2.97	.66	1.24	.64	.42	1.89	.49	2.000	.125	2.000	.125	.29	49.3
3 X .65	3.99	.86	2.00	.81	.50	2.31	.55	2.500	.125	2.000	.125	.35	47.3
3 X .72	5.04	1.09	2.97	.98	.59	2.72	.62	3.000	.125	2.000	.125	.41	45.8
3 X .72	4.23	1.02	2.31	.80	.55	2.27	.62	2.500	.125	2.500	.125	.35	61.7
3 X .80	5.31	1.27	3.40	1.03	.64	2.67	.68	3.000	.125	2.500	.125	.41	59.5
4 X .87	6.39	1.55	4.75	1.21	.74	3.07	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	7.48	1.84	6.37	1.39	.85	3.46	.80	4.000	.125	2.500	.125	.54	56.6
5 X 1.02	8.57	2.15	8.27	1.57	.97	3.85	.87	4.500	.125	2.500	.125	.60	55.6
5 X 1.09	9.67	2.48	10.47	1.75	1.06	4.25	.93	5.000	.125	2.500	.125	.66	54.8
4 X 1.13	8.04	2.46	8.11	1.53	1.01	3.30	.97	4.000	.125	3.000	.160	.54	70.1
5 X 1.10	10.77	2.82	12.99	1.93	1.21	4.01	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	9.16	2.84	10.44	1.72	1.14	3.67	1.03	4.500	.125	3.000	.160	.60	68.7
5 X 1.28	10.32	3.24	13.11	1.91	1.27	4.04	1.09	5.000	.125	3.000	.160	.66	67.5
5 X 1.35	11.47	3.66	16.13	2.10	1.41	4.41	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.00	8.73	3.90	11.63	1.74	1.33	2.98	1.36	4.000	.125	4.000	.220	.54	98.7
5 X 1.67	9.95	4.47	14.84	1.95	1.49	3.32	1.42	4.500	.125	4.000	.220	.60	90.4
5 X 1.87	12.03	4.42	20.85	2.29	1.84	4.68	1.43	6.000	.160	3.000	.160	1.01	65.5
5 X 1.74	11.17	5.05	18.48	2.15	1.66	3.66	1.48	5.000	.125	4.000	.220	.66	94.5
7 X 1.77	13.79	4.92	24.70	2.48	1.79	5.02	1.51	6.500	.160	3.000	.160	1.09	64.6
5 X 1.82	12.39	5.55	22.56	2.36	1.82	3.99	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.86	14.96	5.44	29.18	2.67	1.95	5.36	1.59	7.000	.160	3.000	.160	1.17	63.8
6 X 1.88	13.19	5.41	24.21	2.43	1.84	4.48	1.61	6.000	.160	3.500	.190	1.01	78.4
7 X 1.98	14.39	5.99	28.82	2.62	2.00	4.81	1.69	6.500	.160	3.500	.190	1.09	77.4
7 X 2.07	15.61	6.59	33.96	2.82	2.17	5.14	1.77	7.000	.160	3.500	.190	1.17	76.4
6 X 2.13	13.65	6.55	27.94	2.54	2.05	4.27	1.82	6.000	.160	4.000	.220	1.01	91.6
7 X 2.22	14.90	7.23	33.16	2.75	2.23	4.59	1.90	6.500	.160	4.000	.220	1.09	90.4
7 X 2.32	16.15	7.92	38.88	2.95	2.41	4.91	1.98	7.000	.160	4.000	.220	1.17	89.3

8.0 IN. EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 3.00 SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.08	.48	.73	.46	.35	1.52	.43	1.500	.125	2.000	.125	.23	53.2
2 X .58	3.16	.67	1.31	.61	.42	1.96	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	4.31	.88	2.10	.77	.49	2.39	.55	2.500	.125	2.000	.125	.36	47.3
3 X .72	5.52	1.11	3.12	.93	.57	2.81	.62	3.000	.125	2.000	.125	.42	45.8
3 X .72	4.61	1.04	2.44	.82	.53	2.35	.62	2.500	.125	2.500	.125	.36	61.7
3 X .80	5.85	1.30	3.59	.99	.61	2.76	.68	3.000	.125	2.500	.125	.42	59.5
4 X .87	7.11	1.58	5.00	1.16	.70	3.17	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	8.39	1.87	6.70	1.33	.80	3.58	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	9.87	2.19	8.69	1.50	.90	3.98	.87	4.500	.125	2.500	.125	.61	55.6
5 X 1.09	10.96	2.52	11.00	1.67	1.00	4.37	.93	5.000	.125	2.500	.125	.67	54.6
4 X 1.13	9.11	2.20	8.57	1.47	.94	3.43	.97	4.000	.125	3.000	.160	.55	70.1
5 X 1.16	12.25	2.87	13.84	1.85	1.11	4.76	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	10.45	2.89	11.03	1.65	1.00	3.82	1.03	4.500	.125	3.000	.160	.61	68.7
5 X 1.28	11.79	3.29	13.84	1.84	1.17	4.20	1.09	5.000	.125	3.000	.160	.67	67.5
5 X 1.35	13.14	3.72	17.03	2.02	1.30	4.58	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.60	10.65	3.96	12.43	1.69	1.24	3.14	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.67	11.47	4.54	15.86	1.89	1.38	3.49	1.42	4.500	.125	4.000	.220	.61	96.4
6 X 1.67	14.49	4.49	21.87	2.22	1.51	4.87	1.43	6.000	.160	3.000	.160	1.02	65.5
5 X 1.74	12.90	5.13	19.73	2.10	1.53	3.85	1.48	5.000	.125	4.000	.220	.67	94.5
7 X 1.77	15.85	5.01	20.16	2.41	1.65	5.22	1.51	6.500	.160	3.000	.160	1.10	64.6
6 X 1.82	14.33	5.74	24.08	2.30	1.68	4.20	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.86	17.21	5.54	30.92	2.60	1.80	5.58	1.59	7.000	.160	3.000	.160	1.18	63.8
6 X 1.88	15.19	5.50	25.75	2.36	1.69	4.68	1.61	6.000	.160	3.500	.190	1.02	78.4
7 X 1.98	16.59	6.10	30.65	2.56	1.85	5.03	1.69	6.500	.160	3.500	.190	1.10	77.4
7 X 2.07	18.00	6.71	36.06	2.75	2.00	5.37	1.77	7.000	.160	3.500	.190	1.18	76.4
6 X 2.13	15.78	6.56	29.86	2.49	1.89	4.48	1.82	6.000	.160	4.000	.220	1.02	91.6
7 X 2.22	17.22	7.35	35.43	2.69	2.06	4.82	1.90	6.500	.160	4.000	.220	1.10	90.4
7 X 2.32	18.66	8.06	41.54	2.89	2.22	5.15	1.98	7.000	.160	4.000	.220	1.18	89.3

8.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 3.50 SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.12	.49	.77	.44	.36	1.57	.43	1.500	.125	2.000	.125	.24	53.2
2 X .58	3.27	.68	1.38	.59	.42	2.02	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	4.53	.90	2.20	.74	.49	2.45	.55	2.500	.125	2.000	.125	.37	47.3
3 X .72	5.80	1.13	3.20	.89	.56	2.88	.62	3.000	.125	2.000	.125	.43	45.8
3 X .72	4.89	1.06	2.55	.79	.52	2.42	.62	2.500	.125	2.500	.125	.37	61.7
3 X .80	6.27	1.32	3.75	.95	.60	2.84	.68	3.000	.125	2.500	.125	.43	59.5
4 X .87	7.69	1.60	5.22	1.11	.68	3.26	.74	3.500	.125	2.500	.125	.49	57.9
4 X .94	9.13	1.90	6.98	1.27	.76	3.67	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	10.60	2.22	9.05	1.44	.85	4.08	.87	4.500	.125	2.500	.125	.62	55.0
5 X 1.09	12.07	2.55	11.46	1.61	.95	4.49	.93	5.000	.125	2.500	.125	.68	54.6
4 X 1.13	10.03	2.53	8.97	1.42	.89	3.94	.97	4.000	.125	3.000	.160	.55	70.1
6 X 1.16	13.55	2.91	14.20	1.76	1.05	4.89	.99	5.500	.125	2.500	.125	.74	53.7
5 X 1.21	11.56	2.93	11.53	1.60	1.00	3.94	1.03	4.500	.125	3.000	.160	.62	68.7
5 X 1.28	13.09	3.34	14.47	1.78	1.10	4.33	1.09	5.000	.125	3.000	.160	.68	67.5
6 X 1.35	14.63	3.77	17.80	1.96	1.22	4.72	1.15	5.500	.125	3.000	.160	.74	66.5
4 X 1.50	11.24	4.62	16.14	1.64	1.17	3.27	1.36	4.000	.125	4.000	.220	.55	95.7
5 X 1.67	12.86	4.60	18.73	1.84	1.30	3.84	1.42	4.500	.125	4.000	.220	.62	96.4
6 X 1.67	16.19	4.56	22.92	2.10	1.42	5.02	1.43	6.000	.160	3.000	.160	1.03	65.5
5 X 1.74	14.50	5.20	20.81	2.04	1.44	4.00	1.48	5.000	.125	4.000	.220	.68	94.5
7 X 1.77	17.74	5.08	27.42	2.34	1.55	5.39	1.51	6.500	.160	3.000	.160	1.11	64.6
6 X 1.82	16.14	5.81	25.37	2.24	1.57	4.37	1.55	5.500	.125	4.000	.220	.74	93.0
7 X 1.86	19.30	5.83	32.40	2.52	1.68	5.76	1.59	7.000	.160	3.000	.160	1.19	63.8
6 X 1.88	17.05	6.58	27.07	2.30	1.59	4.85	1.61	6.000	.160	3.500	.190	1.03	78.4
7 X 1.96	18.05	6.19	32.23	2.49	1.73	5.21	1.69	6.500	.160	3.500	.190	1.11	77.4
7 X 2.07	20.25	6.81	37.91	2.68	1.87	5.57	1.77	7.000	.160	3.500	.190	1.19	76.4
6 X 2.13	17.77	6.76	31.52	2.44	1.77	4.66	1.82	6.000	.160	4.000	.220	1.03	91.6
7 X 2.22	19.42	7.46	37.39	2.63	1.93	5.01	1.90	6.500	.160	4.000	.220	1.11	90.4
7 X 2.32	21.07	8.18	43.83	2.83	2.08	5.36	1.98	7.000	.160	4.000	.220	1.19	89.3

8.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 4.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.13	.50	.81	.43	.38	1.62	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	3.33	.70	1.44	.57	.43	2.07	.49	2.000	.125	2.000	.125	.31	49.3
3 X .65	4.66	.91	2.29	.71	.49	2.51	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	6.10	1.15	3.38	.80	.55	2.95	.62	3.000	.125	2.000	.125	.44	45.8
3 X .72	5.07	1.08	2.06	.70	.52	2.48	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	6.57	1.34	3.90	.91	.59	2.91	.68	3.000	.125	2.500	.125	.44	59.5
4 X .87	8.13	1.62	5.41	1.07	.67	3.53	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	9.73	1.93	7.23	1.23	.74	3.76	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	11.36	2.25	9.38	1.39	.83	4.17	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	13.00	2.59	11.86	1.55	.91	4.59	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	10.80	2.57	9.33	1.37	.80	3.64	.97	4.000	.125	3.000	.160	.56	70.1
6 X 1.16	14.06	2.94	14.70	1.72	1.00	5.00	.99	5.500	.125	2.500	.125	.75	53.7
5 X 1.21	12.51	2.96	11.98	1.54	.96	4.04	1.03	4.500	.125	3.000	.160	.63	68.7
5 X 1.28	14.23	3.38	15.02	1.72	1.06	4.44	1.09	5.000	.125	3.000	.160	.69	67.5
6 X 1.35	15.96	3.81	18.47	1.89	1.16	4.84	1.15	5.500	.125	3.000	.160	.75	66.5
4 X 1.60	12.29	4.07	13.76	1.60	1.12	3.38	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	14.12	4.66	17.51	1.80	1.24	3.76	1.42	4.500	.125	4.000	.220	.63	96.4
6 X 1.67	17.74	4.62	23.84	2.10	1.34	5.16	1.43	6.000	.160	3.000	.160	1.04	65.5
5 X 1.74	15.95	5.26	21.76	1.99	1.36	4.14	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	19.48	5.15	28.52	2.28	1.46	5.54	1.51	6.500	.160	3.000	.160	1.12	64.6
6 X 1.82	17.79	5.88	26.52	2.19	1.49	4.51	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	21.23	5.70	33.71	2.46	1.59	5.91	1.59	7.000	.160	3.000	.160	1.20	63.8
6 X 1.88	18.75	5.65	26.24	2.24	1.51	4.99	1.51	6.000	.160	3.500	.190	1.04	78.4
7 X 1.98	20.55	6.27	33.01	2.43	1.64	5.30	1.59	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	22.35	6.90	39.54	2.62	1.77	5.73	1.77	7.000	.160	3.500	.190	1.20	78.4
6 X 2.13	19.02	6.84	32.98	2.38	1.68	4.82	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	21.47	7.95	39.11	2.58	1.82	5.18	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	23.32	8.28	45.84	2.77	1.97	5.53	1.98	7.000	.160	4.000	.220	1.20	89.3

8.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 5.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.11	.53	.90	.41	.42	1.70	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	3.34	.73	1.57	.53	.47	2.16	.49	2.000	.125	2.000	.125	.33	49.3
3 X .65	4.77	.95	2.47	.67	.52	2.61	.55	2.000	.125	2.000	.125	.39	47.3
3 X .72	6.35	1.18	3.62	.80	.57	3.06	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	5.26	1.11	2.87	.71	.55	2.58	.62	2.500	.125	2.500	.125	.39	61.7
3 X .80	6.93	1.38	4.17	.86	.60	3.02	.68	3.000	.125	2.500	.125	.45	59.5
4 X .87	8.70	1.67	5.77	1.00	.66	3.46	.74	3.500	.125	2.500	.125	.52	57.9
4 X .94	10.55	1.98	7.69	1.15	.73	3.90	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	12.45	2.30	9.95	1.30	.80	4.33	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	14.41	2.65	12.57	1.46	.87	4.75	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	11.96	2.63	9.97	1.29	.83	3.79	.97	4.000	.125	3.000	.100	.58	70.1
5 X 1.16	16.39	3.01	15.57	1.61	.95	5.18	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	13.96	3.63	12.77	1.46	.91	4.21	1.03	4.500	.125	3.000	.100	.64	68.7
5 X 1.28	16.04	3.45	15.99	1.62	1.00	4.63	1.09	5.000	.125	3.000	.160	.70	67.5
6 X 1.35	18.12	3.90	19.04	1.79	1.08	5.04	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.60	14.04	4.17	14.86	1.53	1.06	3.57	1.36	4.000	.125	4.000	.220	.58	98.7
5 X 1.67	16.23	4.76	18.86	1.71	1.16	3.96	1.42	4.500	.125	4.000	.220	.64	96.4
5 X 1.87	20.35	4.73	25.43	1.99	1.25	5.36	1.43	6.000	.160	3.000	.160	1.06	65.5
5 X 1.74	18.44	5.37	23.40	1.90	1.27	4.56	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	22.46	5.27	30.41	2.16	1.35	5.77	1.51	6.500	.160	3.000	.160	1.14	64.6
6 X 1.82	20.07	6.00	28.48	2.09	1.38	4.75	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	24.58	5.63	35.94	2.34	1.46	6.16	1.59	7.000	.160	3.000	.160	1.22	63.8
6 X 1.88	21.71	5.78	30.25	2.14	1.39	5.23	1.61	6.000	.160	3.500	.190	1.06	78.4
7 X 1.98	23.69	6.40	35.98	2.32	1.51	5.62	1.69	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	26.08	7.05	42.31	2.50	1.62	6.00	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	22.90	6.99	35.50	2.28	1.55	5.08	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	25.14	7.72	42.07	2.47	1.67	5.45	1.90	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	27.69	8.46	49.28	2.66	1.80	5.83	1.98	7.000	.160	4.000	.220	1.22	89.3

8.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA= 6.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.07	.55	.98	.39	.47	1.78	.43	1.500	.125	2.000	.125	.28	53.2
2 X .58	3.30	.75	1.09	.51	.51	2.24	.49	2.000	.125	2.000	.125	.34	49.3
3 X .65	4.76	.98	2.63	.63	.55	2.70	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	6.41	1.22	3.84	.76	.60	3.15	.62	3.000	.125	2.000	.125	.47	45.8
3 X .72	5.30	1.15	3.06	.68	.58	2.67	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	7.06	1.42	4.43	.81	.63	3.12	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	8.96	1.71	8.11	.93	.68	3.57	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	10.99	2.02	8.11	1.09	.74	4.01	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	13.11	2.35	10.47	1.23	.80	4.45	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	15.31	2.70	13.20	1.38	.86	4.89	.93	5.000	.125	2.500	.125	.72	54.6
4 X 1.13	12.70	2.69	10.53	1.23	.83	3.92	.97	4.000	.125	3.000	.160	.59	70.1
5 X 1.16	17.56	3.07	16.33	1.53	.93	5.32	.99	5.500	.125	2.500	.125	.78	53.7
5 X 1.21	14.98	3.10	13.47	1.36	.90	4.35	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	17.31	3.52	16.84	1.54	.97	4.78	1.09	5.000	.125	3.000	.160	.72	67.5
5 X 1.35	19.70	3.97	20.65	1.70	1.05	5.20	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.50	15.35	4.26	15.83	1.47	1.03	3.72	1.36	4.000	.125	4.000	.220	.59	98.7
5 X 1.67	17.87	4.86	20.04	1.64	1.12	4.13	1.42	4.500	.125	4.000	.220	.66	96.4
5 X 1.67	22.38	4.83	26.80	1.90	1.20	5.55	1.43	6.000	.160	3.000	.160	1.00	65.5
5 X 1.74	20.42	5.47	24.62	1.82	1.22	4.93	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	24.83	5.37	32.03	2.07	1.29	5.96	1.51	6.500	.160	3.000	.160	1.16	64.6
5 X 1.82	22.99	6.11	30.16	2.00	1.31	4.94	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.86	27.31	5.95	37.84	2.23	1.39	6.36	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	24.10	5.69	31.97	2.05	1.33	5.42	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.98	26.04	6.53	38.01	2.22	1.43	5.82	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	29.19	7.18	44.07	2.40	1.53	6.22	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	25.64	7.13	37.65	2.19	1.47	5.28	1.82	6.000	.160	4.000	.220	1.08	91.6
7 X 2.22	28.25	7.86	44.56	2.38	1.58	5.67	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	30.68	8.51	52.20	2.56	1.69	6.06	1.98	7.000	.160	4.000	.220	1.24	89.3

8.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA= 7.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.02	.58	1.06	.38	.53	1.85	.43	1.500	.125	2.000	.125	.30	53.2
2 X .56	3.23	.78	1.61	.49	.56	2.32	.49	2.000	.125	2.000	.125	.36	49.3
3 X .65	4.09	1.01	2.80	.61	.60	2.78	.55	2.500	.125	2.000	.125	.42	47.3
3 X .72	6.37	1.25	4.06	.73	.64	3.24	.62	3.000	.125	2.000	.125	.48	45.8
3 X .72	5.26	1.18	3.26	.65	.62	2.76	.62	2.500	.125	2.500	.125	.42	61.7
3 X .80	7.06	1.46	4.68	.78	.66	3.21	.68	3.000	.125	2.500	.125	.48	59.5
4 X .87	9.05	1.75	6.42	.91	.71	3.67	.74	3.500	.125	2.500	.125	.55	57.9
4 X .94	11.19	2.07	8.51	1.04	.76	4.11	.80	4.000	.125	2.500	.125	.61	56.0
5 X 1.02	13.46	2.40	10.95	1.18	.81	4.56	.87	4.500	.125	2.500	.125	.67	55.6
5 X 1.09	15.83	2.75	13.79	1.32	.87	5.00	.93	5.000	.125	2.500	.125	.73	54.6
4 X 1.13	13.14	2.74	11.07	1.16	.84	4.03	.97	4.000	.125	3.000	.160	.61	70.1
5 X 1.16	18.36	3.13	17.03	1.46	.93	5.44	.99	5.500	.125	2.500	.125	.80	53.7
5 X 1.21	15.01	3.16	14.12	1.33	.90	4.47	1.03	4.500	.125	3.000	.160	.67	68.7
5 X 1.28	18.17	3.59	17.61	1.48	.97	4.91	1.09	5.000	.125	3.000	.160	.73	67.5
5 X 1.35	20.85	4.04	21.57	1.63	1.04	5.34	1.15	5.500	.125	3.000	.160	.80	66.5
4 X 1.66	16.31	4.34	16.72	1.41	1.03	3.85	1.36	4.000	.125	4.000	.220	.61	98.7
5 X 1.67	19.09	4.95	21.12	1.58	1.11	4.27	1.42	4.500	.125	4.000	.220	.67	90.4
5 X 1.67	23.96	4.92	28.04	1.82	1.17	5.70	1.43	6.000	.160	3.000	.160	1.10	65.5
5 X 1.74	21.93	5.57	26.09	1.75	1.19	4.89	1.48	5.000	.125	4.000	.220	.73	94.5
7 X 1.77	26.66	5.47	35.48	1.98	1.26	6.12	1.51	6.500	.160	3.000	.160	1.18	84.6
5 X 1.82	24.82	6.21	31.07	1.92	1.28	5.10	1.55	5.500	.125	4.000	.220	.80	93.0
7 X 1.86	29.46	6.65	39.52	2.15	1.34	6.53	1.59	7.000	.160	3.000	.160	1.26	63.8
6 X 1.88	25.98	6.00	33.51	1.97	1.29	5.59	1.61	6.000	.160	3.500	.190	1.10	78.4
7 X 1.98	28.84	6.64	39.81	2.14	1.38	5.99	1.69	6.500	.160	3.500	.190	1.18	77.4
7 X 2.07	31.73	7.30	46.75	2.31	1.47	6.40	1.77	7.000	.160	3.500	.190	1.26	76.4
6 X 2.13	27.87	7.25	39.56	2.12	1.42	5.46	1.82	6.000	.160	4.000	.220	1.10	91.6
7 X 2.22	30.83	7.99	46.80	2.29	1.52	5.86	1.90	6.500	.160	4.000	.220	1.18	90.4
7 X 2.32	33.81	8.75	54.70	2.47	1.62	6.26	1.98	7.000	.160	4.000	.220	1.26	89.3

8.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA= 8.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	1.98	.60	1.15	.37	.58	1.92	.43	1.500	.125	2.000	.125	.31	53.2
2 X .58	3.16	.81	1.93	.48	.61	2.39	.49	2.000	.125	2.000	.125	.38	49.3
3 X .65	4.60	1.04	2.96	.59	.64	2.86	.55	2.500	.125	2.000	.125	.44	47.3
3 X .72	6.27	1.29	4.27	.70	.68	3.32	.62	3.000	.125	2.000	.125	.50	45.8
3 X .72	5.19	1.22	3.45	.63	.66	2.84	.62	2.500	.125	2.500	.125	.44	61.7
3 X .80	7.00	1.50	4.93	.75	.70	3.30	.68	3.000	.125	2.500	.125	.50	59.5
4 X .87	9.62	1.79	6.73	.88	.75	3.75	.74	3.500	.125	2.500	.125	.56	57.9
4 X .94	11.22	2.11	8.89	1.00	.79	4.21	.80	4.000	.125	2.500	.125	.63	56.6
5 X 1.02	13.59	2.45	11.42	1.13	.84	4.66	.87	4.500	.125	2.500	.125	.69	55.6
5 X 1.09	16.09	2.81	14.34	1.27	.89	5.11	.93	5.000	.125	2.500	.125	.75	54.6
4 X 1.13	13.56	2.80	11.58	1.14	.87	4.13	.97	4.000	.125	3.000	.100	.63	70.1
5 X 1.16	18.71	3.18	17.68	1.40	.94	5.56	.99	5.500	.125	2.500	.125	.81	53.7
5 X 1.21	15.97	3.22	14.73	1.26	.92	4.58	1.03	4.500	.125	3.000	.160	.69	68.7
5 X 1.28	18.70	3.65	18.34	1.42	.98	5.02	1.09	5.000	.125	3.000	.160	.75	67.5
6 X 1.35	21.53	4.11	22.43	1.57	1.04	5.46	1.15	5.500	.125	3.000	.160	.81	66.5
4 X 1.50	16.96	4.43	17.56	1.37	1.03	3.97	1.36	4.000	.125	4.000	.220	.63	98.7
5 X 1.67	19.98	5.03	22.12	1.53	1.11	4.39	1.42	4.500	.125	4.000	.220	.69	96.4
6 X 1.67	25.01	5.00	29.18	1.70	1.17	5.83	1.43	6.000	.160	3.000	.160	1.12	65.5
5 X 1.74	23.00	5.56	27.28	1.70	1.18	4.82	1.48	5.000	.125	4.000	.220	.75	94.5
7 X 1.77	28.04	5.56	34.82	1.91	1.24	6.26	1.51	6.500	.160	3.000	.160	1.20	64.6
6 X 1.82	26.22	6.31	33.05	1.86	1.26	5.24	1.55	5.500	.125	4.000	.220	.81	93.0
7 X 1.86	31.11	6.19	41.07	2.07	1.32	6.68	1.59	7.000	.160	3.000	.160	1.28	63.8
6 X 1.86	27.42	6.10	34.93	1.91	1.27	5.73	1.61	6.000	.160	3.500	.190	1.12	78.4
7 X 1.96	30.57	6.75	41.45	2.07	1.36	6.14	1.69	6.500	.160	3.500	.190	1.20	77.4
7 X 2.07	33.76	7.42	48.65	2.23	1.44	6.56	1.77	7.000	.160	3.500	.190	1.28	76.4
6 X 2.13	29.65	7.37	41.31	2.05	1.39	5.01	1.82	6.000	.160	4.000	.220	1.12	91.6
7 X 2.22	32.92	8.12	48.83	2.22	1.48	6.02	1.90	6.500	.160	4.000	.220	1.20	90.4
7 X 2.32	36.22	8.69	57.09	2.39	1.58	6.42	1.98	7.000	.160	4.000	.220	1.28	89.3

TABLE 3

EFFECTIVE PLATING WIDTH = 10"

5/16" - 1" PLATE THICKNESSES

MAX FLANGE WIDTH = 6"

10.0 IN. EFFECTIVE WIDTH

.313 IN. PLATE (AREA= 3.13 SQ. IN.)

NOM. D	X	LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.50	2.27	.47	.70	.44	.31	1.50	.43	1.500	.125	2.000	.125	.23	53.2
2	X	.58	3.43	.66	1.20	.59	.37	1.94	.49	2.000	.125	2.000	.125	.29	49.3
3	X	.65	4.66	.87	2.06	.75	.44	2.37	.55	2.500	.125	2.000	.125	.35	47.3
3	X	.72	5.94	1.10	3.07	.91	.52	2.80	.62	3.000	.125	2.000	.125	.41	45.8
3	X	.72	4.97	1.02	2.39	.80	.48	2.33	.62	2.500	.125	2.500	.125	.35	61.7
3	X	.80	6.28	1.28	3.53	.96	.56	2.75	.68	3.000	.125	2.500	.125	.41	59.5
4	X	.87	7.61	1.56	4.93	1.13	.65	3.16	.74	3.500	.125	2.500	.125	.48	57.9
4	X	.94	8.94	1.80	6.03	1.30	.74	3.57	.80	4.000	.125	2.500	.125	.54	56.6
5	X	1.02	10.28	2.17	8.02	1.47	.84	3.97	.87	4.500	.125	2.500	.125	.60	55.6
5	X	1.09	11.62	2.50	10.93	1.64	.94	4.37	.93	5.000	.125	2.500	.125	.66	54.6
4	X	1.13	9.67	2.48	8.50	1.44	.88	3.43	.97	4.000	.125	3.000	.160	.54	70.1
5	X	1.16	12.97	2.85	13.57	1.82	1.05	4.77	.99	5.000	.125	2.500	.125	.73	53.7
5	X	1.21	11.06	2.87	10.96	1.62	.99	3.82	1.03	4.500	.125	3.000	.160	.60	68.7
5	X	1.28	12.40	3.27	13.77	1.81	1.11	4.21	1.09	5.000	.125	3.000	.160	.66	67.5
5	X	1.35	13.80	3.70	16.97	1.99	1.22	4.59	1.15	5.500	.125	3.000	.160	.73	66.5
4	X	1.60	10.60	3.93	12.37	1.66	1.17	3.15	1.36	4.000	.125	4.000	.220	.54	90.7
5	X	1.67	12.08	4.51	15.80	1.86	1.31	3.50	1.42	4.500	.125	4.000	.220	.60	96.4
6	X	1.67	15.25	4.47	21.83	2.19	1.43	4.58	1.43	6.000	.160	3.000	.160	1.01	65.5
5	X	1.74	13.57	5.10	19.70	2.07	1.45	3.86	1.46	5.000	.125	4.000	.220	.66	94.5
7	X	1.77	16.65	4.39	25.15	2.38	1.57	5.24	1.51	6.500	.160	3.000	.160	1.09	64.6
6	X	1.82	15.06	5.71	24.07	2.27	1.58	4.21	1.55	5.500	.125	4.000	.220	.73	93.0
7	X	1.86	18.07	5.52	30.93	2.56	1.71	5.60	1.59	7.000	.160	3.000	.160	1.17	63.8
6	X	1.88	15.95	5.48	25.74	2.33	1.61	4.70	1.61	6.000	.160	3.500	.190	1.01	78.4
7	X	1.98	17.41	6.07	30.67	2.53	1.76	5.05	1.69	6.500	.160	3.500	.190	1.09	77.4
7	X	2.07	18.67	6.69	36.11	2.72	1.91	5.40	1.77	7.000	.160	3.500	.190	1.17	76.4
6	X	2.13	16.24	6.63	29.89	2.45	1.81	4.51	1.82	6.000	.160	4.000	.220	1.01	91.6
7	X	2.22	18.05	7.33	35.50	2.66	1.97	4.85	1.90	6.500	.160	4.000	.220	1.09	90.4
7	X	2.32	19.55	8.04	41.05	2.86	2.13	5.18	1.98	7.000	.160	4.000	.220	1.17	89.3
6	X	2.50	17.24	8.83	36.31	2.62	2.11	4.21	2.18	6.000	.160	5.000	.250	1.01	119.0
7	X	2.65	18.80	9.49	42.97	2.82	2.29	4.53	2.26	6.500	.160	5.000	.250	1.09	117.3
7	X	2.75	20.37	10.17	50.25	3.03	2.47	4.85	2.34	7.000	.160	5.000	.250	1.17	115.8
8	X	3.10	22.04	11.53	59.46	3.21	2.70	5.11	2.64	7.500	.190	5.000	.250	1.48	114.5
8	X	3.21	23.84	12.59	68.28	3.41	2.89	5.42	2.74	8.000	.190	5.000	.250	1.58	113.3
6	X	3.26	17.68	11.91	49.11	2.76	2.52	3.79	2.80	6.000	.160	6.000	.313	1.01	148.0
7	X	3.36	19.91	13.04	58.26	2.98	2.73	4.08	2.88	6.500	.160	6.000	.313	1.09	145.6
7	X	3.47	21.15	14.20	68.13	3.20	2.94	4.38	2.96	7.000	.160	6.000	.313	1.17	143.5
8	X	3.82	22.95	15.69	72.79	3.38	3.17	4.64	3.26	7.500	.190	6.000	.313	1.48	141.8
8	X	3.94	24.64	15.92	83.39	3.59	3.38	4.93	3.35	8.000	.190	6.000	.313	1.58	140.2
9	X	4.34	26.55	18.57	98.29	3.78	3.63	5.19	3.70	8.500	.220	6.000	.313	1.94	138.7
9	X	4.47	28.29	19.89	108.77	3.96	3.84	5.47	3.81	9.000	.220	6.000	.313	2.05	137.4
10	X	4.60	30.05	21.24	122.09	4.16	4.06	5.75	3.92	9.500	.220	6.000	.313	2.16	136.2
9	X	4.76	26.94	21.89	104.26	3.81	3.87	4.94	4.06	8.500	.220	6.000	.375	1.94	138.7
9	X	4.89	28.73	22.57	117.70	4.02	4.10	5.22	4.17	9.000	.220	6.000	.375	2.05	137.4
10	X	5.02	30.53	24.36	132.05	4.22	4.33	5.49	4.28	9.500	.220	6.000	.375	2.16	136.2
10	X	5.50	32.70	26.08	149.63	4.38	4.58	5.74	4.68	10.000	.250	6.000	.375	2.58	135.0
11	X	5.64	34.56	27.67	166.19	4.58	4.81	6.01	4.81	10.500	.250	6.000	.375	2.70	134.0
11	X	5.79	36.47	29.28	183.74	4.78	5.04	6.27	4.93	11.000	.250	6.000	.375	2.83	132.9

10.0 IN. EFFECTIVE WIDTH

.313 IN. PLATE (AREA= 3.13 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	33.13	28.39	159.45	4.42	4.81	5.50	5.05	10.000	.250	5.000	.438	2.58	135.0
11 X 6.07	35.05	30.73	177.04	4.62	5.05	5.76	5.17	10.500	.250	6.000	.438	2.70	134.0
11 X 6.21	36.96	32.50	195.66	4.82	5.29	6.02	5.30	11.000	.250	6.000	.438	2.83	132.9
12 X 7.38	42.14	37.48	244.29	5.09	5.80	6.52	6.29	12.000	.313	6.000	.438	3.85	131.0
13 X 7.56	44.25	39.44	267.17	5.28	6.04	6.77	6.45	12.500	.313	6.000	.438	4.01	130.1
13 X 7.96	44.81	42.85	288.67	5.32	6.26	6.55	6.80	12.500	.313	6.000	.500	4.01	130.1
13 X 8.16	46.99	44.96	305.92	5.51	6.51	6.80	6.95	13.000	.313	6.000	.500	4.17	129.2
14 X 8.35	49.19	47.12	332.42	5.70	6.76	7.05	7.11	13.500	.313	6.000	.500	4.32	128.4

10.0 IN. EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 3.75 SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.32	.48	.74	.42	.32	1.55	.43	1.500	.125	2.000	.125	.23	53.2
2 X .58	3.58	.67	1.34	.56	.38	2.00	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	4.96	.89	2.16	.71	.44	2.44	.55	2.500	.125	2.000	.125	.36	47.3
3 X .72	6.41	1.12	3.21	.86	.50	2.87	.62	3.000	.125	2.000	.125	.42	45.8
3 X .72	5.34	1.04	2.91	.78	.47	2.41	.62	2.500	.125	2.500	.125	.36	61.7
3 X .80	6.84	1.30	3.70	.91	.54	2.83	.68	3.000	.125	2.500	.125	.42	59.5
4 X .87	8.38	1.59	5.16	1.07	.62	3.26	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	9.94	1.86	6.93	1.23	.70	3.68	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	11.51	2.20	9.01	1.40	.78	4.09	.87	4.500	.125	2.500	.125	.61	55.6
5 X 1.09	13.09	2.54	11.42	1.56	.87	4.50	.93	5.000	.125	2.500	.125	.67	54.6
4 X 1.13	10.36	2.51	8.93	1.36	.82	3.55	.97	4.000	.125	3.000	.160	.55	70.1
6 X 1.16	14.67	2.89	14.18	1.73	.97	4.91	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	12.52	2.91	11.50	1.55	.92	3.96	1.03	4.500	.125	3.000	.160	.61	69.7
5 X 1.28	14.16	3.32	14.46	1.73	1.02	4.35	1.09	5.000	.125	3.000	.160	.67	67.5
5 X 1.35	15.81	3.75	17.81	1.91	1.13	4.75	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.50	12.13	3.99	13.14	1.60	1.08	3.29	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.57	13.66	4.37	16.77	1.80	1.21	3.87	1.42	4.500	.125	4.000	.220	.61	96.4
6 X 1.67	17.45	4.55	22.99	2.11	1.32	5.06	1.43	6.000	.160	3.000	.160	1.02	65.5
5 X 1.74	15.03	5.17	20.89	2.00	1.34	4.04	1.48	5.000	.125	4.000	.220	.67	94.5
7 X 1.77	19.10	5.07	27.94	2.29	1.44	5.43	1.61	6.500	.160	3.000	.160	1.10	64.6
5 X 1.82	17.36	5.79	25.51	2.19	1.47	4.41	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.66	20.70	5.61	32.58	2.47	1.57	5.81	1.59	7.000	.160	3.000	.160	1.18	63.8
6 X 1.88	18.34	5.56	27.21	2.25	1.48	4.69	1.61	6.000	.160	3.500	.190	1.02	78.4
7 X 1.98	20.05	6.17	32.43	2.44	1.62	5.20	1.69	6.500	.160	3.500	.190	1.10	77.4
7 X 2.07	21.76	6.80	38.19	2.63	1.76	5.62	1.77	7.000	.160	3.500	.190	1.18	76.4
6 X 2.13	19.10	6.74	31.75	2.39	1.66	4.71	1.82	6.000	.160	4.000	.220	1.02	91.6
7 X 2.22	20.85	7.44	37.70	2.58	1.81	5.07	1.90	6.500	.160	4.000	.220	1.10	90.4
7 X 2.32	22.61	8.16	44.24	2.78	1.96	5.42	1.98	7.000	.160	4.000	.220	1.18	89.3
6 X 2.50	19.99	8.77	38.65	2.56	1.94	4.43	2.18	6.000	.160	5.000	.250	1.02	119.0
7 X 2.65	21.32	9.04	45.96	2.77	2.11	4.77	2.20	6.500	.160	5.000	.250	1.10	117.3
7 X 2.75	23.65	10.53	53.73	2.97	2.27	5.16	2.34	7.000	.160	5.000	.250	1.18	115.6
8 X 3.10	25.92	11.83	63.04	3.16	2.49	5.38	2.64	7.500	.190	5.000	.250	1.50	114.5
8 X 3.21	27.38	12.81	73.08	3.30	2.07	5.71	2.74	8.000	.190	5.000	.250	1.59	113.3
6 X 3.26	20.83	12.09	48.78	2.73	2.34	4.03	2.80	6.000	.160	6.000	.313	1.02	148.0
7 X 3.30	22.73	13.25	57.55	2.95	2.53	4.34	2.88	6.500	.160	6.000	.313	1.10	145.6
7 X 3.47	24.69	14.43	67.11	3.16	2.72	4.65	2.96	7.000	.160	6.000	.313	1.18	143.5
8 X 3.82	26.07	15.96	78.62	3.35	2.95	4.93	3.20	7.500	.190	6.000	.313	1.50	141.8
8 X 3.94	28.52	17.21	90.02	3.56	3.15	5.23	3.35	8.000	.190	6.000	.313	1.59	140.2
9 X 4.34	30.73	18.92	103.94	3.74	3.38	5.49	3.70	8.500	.220	6.000	.313	1.95	138.7
9 X 4.47	32.73	20.27	117.36	3.94	3.59	5.79	3.81	9.000	.220	6.000	.313	2.06	137.4
10 X 4.60	34.74	21.65	131.70	4.14	3.79	6.08	3.92	9.500	.220	6.000	.313	2.17	136.2
8 X 4.76	31.22	21.50	114.93	3.80	3.62	5.26	4.06	8.500	.220	6.000	.375	1.95	138.7
9 X 4.89	33.26	23.00	127.49	4.01	3.83	5.54	4.17	9.000	.220	6.000	.375	2.06	137.4
10 X 5.02	35.32	24.53	142.96	4.22	4.05	5.83	4.28	9.500	.220	6.000	.375	2.17	136.2
10 X 5.50	37.09	26.63	161.88	4.38	4.30	6.08	4.68	10.000	.250	6.000	.375	2.59	135.0
11 X 5.64	39.61	28.26	179.73	4.56	4.51	6.36	4.81	10.500	.250	6.000	.375	2.72	134.0
11 X 5.79	41.95	29.91	198.63	4.78	4.73	6.64	4.93	11.000	.250	6.000	.375	2.84	132.9

10.0 IN. EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 3.75 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	38.20	29.60	173.05	4.44	4.53	5.85	5.05	10.000	.250	5.000	.438	2.59	135.0
11 X 6.07	40.37	31.39	192.03	4.64	4.76	6.12	5.17	10.500	.250	5.000	.438	2.72	134.0
11 X 6.21	42.55	33.20	212.12	4.84	4.98	6.39	5.30	11.000	.250	5.000	.438	2.84	132.9
12 X 7.38	48.07	38.39	284.13	5.13	5.49	6.88	6.29	12.000	.313	6.000	.438	3.87	131.0
13 X 7.56	50.42	40.40	300.70	5.32	5.73	7.15	6.45	12.500	.313	6.000	.438	4.03	130.1
13 X 7.98	51.07	43.90	303.94	5.37	5.95	6.92	6.80	12.500	.313	6.000	.500	4.03	130.1
13 X 8.16	53.49	45.68	331.08	5.56	6.19	7.19	6.95	13.000	.313	6.000	.500	4.19	129.2
14 X 8.35	55.93	46.29	359.55	5.75	6.43	7.45	7.11	13.500	.313	6.000	.500	4.34	128.4

10.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 4.38 SQ. IN.)

NUM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.33	.49	.79	.40	.34	1.00	.43	1.500	.125	2.000	.125	.24	53.2
2 X .56	3.00	.69	1.41	.54	.39	2.05	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	5.14	.90	2.25	.68	.44	2.50	.55	2.500	.125	2.000	.125	.37	47.3
3 X .72	6.73	1.14	3.34	.82	.50	2.94	.62	3.000	.125	2.000	.125	.43	45.8
3 X .72	5.58	1.06	2.82	.72	.47	2.47	.62	2.500	.125	2.500	.125	.37	61.7
3 X .80	7.24	1.33	3.65	.87	.53	2.91	.66	3.000	.125	2.500	.125	.43	59.5
4 X .87	8.95	1.61	5.37	1.02	.60	3.54	.74	3.500	.125	2.500	.125	.49	57.9
4 X .94	10.71	1.91	7.19	1.18	.67	3.77	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	12.49	2.23	9.35	1.34	.75	4.19	.87	4.500	.125	2.500	.125	.62	55.6
5 X 1.09	14.30	2.57	11.85	1.49	.83	4.61	.93	5.000	.125	2.500	.125	.68	54.6
4 X 1.13	11.66	2.25	9.31	1.32	.78	3.85	.97	4.000	.125	3.000	.160	.55	70.1
6 X 1.16	16.11	2.93	14.71	1.66	.91	5.02	.99	5.500	.125	2.500	.125	.74	53.7
5 X 1.21	13.74	2.95	11.98	1.49	.87	4.07	1.03	4.500	.125	3.000	.160	.62	68.7
5 X 1.26	15.83	3.36	13.85	1.66	.96	4.47	1.09	5.000	.125	3.000	.160	.68	67.5
6 X 1.35	17.51	3.80	18.53	1.83	1.06	4.88	1.15	5.500	.125	3.000	.160	.74	66.5
4 X 1.00	13.48	4.04	13.81	1.55	1.02	3.41	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.07	15.46	4.63	17.66	1.74	1.14	3.80	1.42	4.500	.125	4.000	.220	.62	96.4
6 X 1.67	19.43	4.61	23.98	2.03	1.23	5.20	1.43	6.000	.160	3.000	.160	1.03	65.5
5 X 1.74	17.48	5.24	21.91	1.93	1.25	4.18	1.48	5.000	.125	4.000	.220	.68	94.5
7 X 1.77	21.32	5.14	28.73	2.21	1.35	5.59	1.51	6.500	.160	3.000	.160	1.11	64.6
6 X 1.82	19.49	5.86	26.74	2.13	1.37	4.57	1.55	5.500	.125	4.000	.220	.74	93.0
7 X 1.86	23.22	5.69	33.99	2.39	1.46	5.97	1.59	7.000	.160	3.000	.160	1.19	63.8
5 X 1.88	20.92	5.84	26.47	2.18	1.39	5.05	1.61	6.000	.160	3.500	.190	1.03	78.4
7 X 1.96	22.47	6.25	33.93	2.37	1.51	5.43	1.69	6.500	.160	3.500	.190	1.11	77.4
7 X 2.07	24.43	6.89	39.96	2.55	1.64	5.80	1.77	7.000	.160	3.500	.190	1.19	76.4
5 X 2.13	21.45	6.83	33.34	2.62	1.55	4.88	1.82	6.000	.160	4.000	.220	1.03	91.6
7 X 2.22	23.46	7.54	39.58	2.61	1.69	5.25	1.90	6.500	.160	4.000	.220	1.11	90.4
7 X 2.32	25.47	8.27	46.44	2.70	1.82	5.61	1.98	7.000	.160	4.000	.220	1.19	89.3
6 X 2.56	22.58	8.38	41.03	2.50	1.82	4.62	2.18	6.000	.160	5.000	.250	1.03	119.0
7 X 2.65	24.00	9.76	48.52	2.70	1.97	4.97	2.26	6.500	.160	5.000	.250	1.11	117.3
7 X 2.75	26.75	10.87	56.71	2.91	2.12	5.32	2.34	7.000	.160	5.000	.250	1.19	115.8
8 X 3.10	28.65	11.99	67.24	3.10	2.33	5.61	2.64	7.500	.190	5.000	.250	1.51	114.5
8 X 3.21	30.96	12.99	77.21	3.29	2.49	5.94	2.74	8.000	.190	5.000	.250	1.60	113.3
6 X 3.26	23.65	12.26	91.97	2.69	2.20	4.24	2.80	6.000	.160	6.000	.313	1.03	148.0
7 X 3.38	25.82	13.43	61.28	2.91	2.37	4.56	2.88	6.500	.160	6.000	.313	1.11	145.6
7 X 3.47	28.00	14.61	71.42	3.12	2.55	4.89	2.96	7.000	.160	6.000	.313	1.19	143.5
8 X 3.82	30.25	16.10	83.66	3.31	2.77	5.17	3.26	7.500	.190	6.000	.313	1.51	141.8
8 X 3.94	32.40	17.46	95.79	3.52	2.95	5.49	3.35	8.000	.190	6.000	.313	1.60	140.2
9 X 4.34	34.79	19.21	110.63	3.70	3.18	5.76	3.70	8.500	.220	6.000	.313	1.97	138.7
9 X 4.47	37.04	20.89	124.89	3.91	3.37	6.07	3.81	9.000	.220	6.000	.313	2.08	137.4
10 X 4.60	39.31	21.99	140.11	4.11	3.56	6.37	3.92	9.500	.220	6.000	.313	2.19	136.2
9 X 4.76	35.39	21.83	120.67	3.78	3.41	5.53	4.06	8.500	.220	6.000	.375	1.97	136.7
9 X 4.89	37.09	23.37	130.12	3.99	3.61	5.83	4.17	9.000	.220	6.000	.375	2.08	137.4
10 X 5.02	40.00	24.92	152.59	4.20	3.81	6.12	4.28	9.500	.220	6.000	.375	2.19	136.2
10 X 5.50	42.57	27.08	172.75	4.37	4.06	6.38	4.68	10.000	.250	6.000	.375	2.61	135.0
11 X 5.64	44.94	28.74	191.74	4.57	4.27	6.67	4.81	10.500	.250	6.000	.375	2.73	134.0
11 X 5.79	47.33	30.43	211.84	4.77	4.48	6.96	4.93	11.000	.250	6.000	.375	2.86	132.9

10.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 4.38 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	d	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	43.17	30.11	185.16	4.43	4.29	6.15	5.05	10.000	.250	5.000	.438	2.61	135.0
11 X 5.87	45.59	31.93	209.40	4.64	4.51	6.43	5.17	10.500	.250	5.000	.438	2.73	134.0
11 X 6.21	48.03	33.77	226.80	4.64	4.72	6.72	5.30	11.000	.250	5.000	.438	2.86	132.9
12 X 7.38	53.91	39.14	282.07	5.14	5.23	7.21	6.29	12.000	.313	6.000	.438	3.89	131.0
13 X 7.36	56.50	41.20	308.26	5.34	5.46	7.48	6.45	12.500	.313	6.000	.438	4.05	130.1
13 X 7.98	57.25	44.77	325.03	5.39	5.68	7.26	6.80	12.500	.313	6.000	.500	4.05	130.1
13 X 8.16	59.90	47.00	353.90	5.59	5.91	7.53	6.95	13.000	.313	6.000	.500	4.21	129.2
14 X 8.35	62.59	49.26	384.18	5.78	6.14	7.80	7.11	13.500	.313	6.000	.500	4.36	128.4

10.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 5.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.31	.50	.83	.39	.36	1.64	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	3.07	.70	1.47	.52	.40	2.10	.49	2.000	.125	2.000	.125	.31	49.3
3 X .65	5.22	.92	2.34	.65	.45	2.55	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	6.92	1.15	3.46	.78	.50	3.00	.62	3.000	.125	2.000	.125	.44	45.8
3 X .72	5.73	1.08	2.72	.70	.48	2.52	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	7.50	1.35	3.99	.84	.53	2.97	.68	3.000	.125	2.500	.125	.44	59.5
4 X .87	9.36	1.63	5.56	.98	.59	3.41	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	11.29	1.94	7.44	1.13	.66	3.84	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	13.27	2.26	9.65	1.28	.73	4.27	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	15.27	2.60	12.22	1.44	.80	4.70	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	12.66	2.56	9.04	1.27	.76	3.74	.97	4.000	.125	3.000	.160	.56	70.1
5 X 1.16	17.30	2.96	15.17	1.59	.88	5.12	.99	5.000	.125	2.500	.125	.75	53.7
5 X 1.21	14.76	2.96	12.40	1.43	.84	4.16	1.03	4.500	.125	3.000	.160	.63	68.7
5 X 1.28	16.86	3.40	15.57	1.60	.92	4.58	1.09	5.000	.125	3.000	.160	.69	67.5
5 X 1.35	18.97	3.84	19.16	1.76	1.01	4.99	1.15	5.500	.125	3.000	.160	.75	66.5
4 X 1.60	14.65	4.09	14.48	1.50	.98	3.52	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	16.89	4.68	18.64	1.69	1.09	3.91	1.42	4.500	.125	4.000	.220	.63	96.4
5 X 1.87	21.17	4.56	24.85	1.97	1.17	5.33	1.43	6.000	.160	3.000	.160	1.04	65.5
5 X 1.74	19.14	5.29	22.81	1.88	1.19	4.31	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	23.31	5.20	29.77	2.14	1.28	5.72	1.51	6.500	.160	3.000	.160	1.12	64.6
5 X 1.82	21.39	5.92	27.82	2.08	1.30	4.70	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	25.44	5.76	33.22	2.31	1.38	6.12	1.59	7.000	.160	3.000	.160	1.20	63.8
6 X 1.88	22.43	5.70	29.56	2.12	1.32	5.18	1.61	6.000	.160	3.500	.190	1.04	78.4
7 X 1.96	24.08	6.33	35.24	2.30	1.43	5.57	1.69	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	26.86	5.97	41.56	2.48	1.54	5.96	1.77	7.000	.160	3.500	.190	1.20	76.4
6 X 2.13	23.01	6.91	34.73	2.26	1.47	5.03	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	25.87	7.62	41.22	2.44	1.59	5.41	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	28.13	8.37	48.36	2.63	1.72	5.78	1.98	7.000	.160	4.000	.220	1.20	89.3
6 X 2.56	24.99	8.98	42.95	2.45	1.72	4.78	2.18	6.000	.160	5.000	.250	1.04	119.0
7 X 2.65	27.33	9.87	50.77	2.64	1.86	5.14	2.26	6.500	.160	5.000	.250	1.12	117.3
7 X 2.75	29.07	10.78	59.32	2.84	2.00	5.50	2.34	7.000	.160	5.000	.250	1.20	115.8
8 X 3.10	32.01	12.14	70.41	3.04	2.20	5.80	2.64	7.500	.190	5.000	.250	1.52	114.5
8 X 3.21	34.37	13.15	80.83	3.23	2.35	6.15	2.74	8.000	.190	5.000	.250	1.62	113.3
6 X 3.28	28.33	12.40	54.79	2.65	2.08	4.42	2.80	6.000	.160	6.000	.313	1.04	148.0
7 X 3.38	28.77	13.28	64.37	2.80	2.24	4.76	2.88	6.500	.160	6.000	.313	1.12	145.6
7 X 3.47	31.21	14.78	75.22	3.07	2.41	5.09	2.96	7.000	.160	6.000	.313	1.20	143.5
8 X 3.82	33.75	16.38	88.17	3.27	2.62	5.38	3.26	7.500	.190	6.000	.313	1.52	141.8
8 X 3.94	36.17	17.47	100.69	3.48	2.79	5.71	3.35	8.000	.190	6.000	.313	1.62	140.2
9 X 4.34	36.72	19.46	116.57	3.60	3.01	5.99	3.70	8.500	.220	6.000	.313	1.96	138.7
9 X 4.47	41.22	20.86	131.57	3.86	3.19	6.31	3.81	9.000	.220	6.000	.313	2.09	137.4
10 X 4.60	43.74	22.28	147.59	4.07	3.37	6.63	3.92	9.500	.220	6.000	.313	2.20	136.2
9 X 4.76	39.43	22.12	127.53	3.75	3.23	5.77	4.06	8.500	.220	6.000	.375	1.96	138.7
9 X 4.89	41.98	23.67	143.81	3.96	3.43	6.07	4.17	9.000	.220	6.000	.375	2.09	137.4
10 X 5.02	44.55	25.25	161.17	4.17	3.62	6.38	4.28	9.500	.220	6.000	.375	2.20	136.2
10 X 5.50	47.62	27.47	182.49	4.34	3.86	6.64	4.58	10.000	.250	6.000	.375	2.63	135.0
11 X 5.64	49.95	29.16	202.51	4.54	4.05	6.95	4.81	10.500	.250	6.000	.375	2.75	134.0
11 X 5.79	52.58	30.87	223.70	4.75	4.25	7.25	4.93	11.000	.250	6.000	.375	2.86	132.9

10.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 5.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	d	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	48.03	30.55	196.06	4.42	4.08	6.42	5.05	10.000	.250	5.000	.438	2.63	135.0
11 X 6.07	50.71	32.39	217.43	4.62	4.29	6.71	5.17	10.500	.250	5.000	.438	2.75	134.0
11 X 6.21	53.39	34.27	240.03	4.83	4.50	7.00	5.30	11.000	.250	6.000	.438	2.86	132.9
12 X 7.36	59.00	39.79	296.38	5.14	5.00	7.50	6.29	12.000	.313	6.000	.438	3.91	131.0
13 X 7.56	62.49	41.89	326.01	5.34	5.22	7.78	6.49	12.500	.313	6.000	.438	4.07	130.1
13 X 7.98	63.33	45.52	344.28	5.40	5.44	7.56	6.80	12.500	.313	6.000	.500	4.07	130.1
13 X 8.10	66.23	47.79	374.70	5.60	5.00	7.84	6.95	13.000	.313	6.000	.500	4.23	129.2
14 X 8.35	69.15	50.10	406.70	5.79	5.88	8.12	7.11	13.500	.313	6.000	.500	4.38	128.4

10.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 6.25 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.25	.53	.91	.37	.40	1.72	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	3.02	.73	1.59	.49	.44	2.19	.49	2.000	.125	2.000	.125	.33	49.3
3 X .65	5.24	.95	2.51	.61	.48	2.65	.55	2.500	.125	2.000	.125	.39	47.3
3 X .72	7.05	1.19	3.69	.73	.52	3.10	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	5.81	1.11	2.92	.65	.50	2.62	.62	2.500	.125	2.500	.125	.39	61.7
3 X .80	7.74	1.38	4.26	.78	.55	3.07	.68	3.000	.125	2.500	.125	.45	59.5
4 X .87	9.82	1.67	5.96	.92	.58	3.52	.74	3.500	.125	2.500	.125	.52	57.9
4 X .94	12.01	1.98	7.87	1.06	.66	3.97	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	14.29	2.31	10.20	1.20	.71	4.41	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	16.64	2.66	12.89	1.34	.77	4.85	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	13.79	2.84	10.25	1.19	.74	3.68	.97	4.000	.125	3.000	.160	.58	70.1
6 X 1.16	19.04	3.02	15.99	1.48	.84	5.29	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	16.23	3.05	13.14	1.34	.81	4.31	1.03	4.500	.125	3.000	.160	.64	68.7
5 X 1.28	18.72	3.47	16.48	1.50	.88	4.74	1.09	5.000	.125	3.000	.160	.70	67.5
5 X 1.35	21.24	3.92	20.26	1.65	.95	5.17	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.36	16.56	4.19	15.44	1.42	.94	3.69	1.36	4.000	.125	4.000	.220	.58	98.7
6 X 1.47	19.17	4.78	19.62	1.60	1.02	4.10	1.42	4.500	.125	4.000	.220	.64	96.4
6 X 1.67	24.02	4.77	26.35	1.85	1.10	5.53	1.43	6.000	.100	3.000	.160	1.06	65.5
5 X 1.74	21.87	5.40	24.56	1.77	1.11	4.51	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	26.60	5.31	31.55	2.02	1.19	5.94	1.51	6.500	.160	3.000	.160	1.14	64.6
6 X 1.82	24.59	6.03	29.67	1.95	1.21	4.92	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	29.20	5.38	37.52	2.18	1.28	6.35	1.59	7.000	.160	3.000	.160	1.22	63.8
6 X 1.88	25.76	5.82	31.47	2.00	1.22	5.40	1.61	6.000	.160	3.500	.190	1.06	78.4
7 X 1.96	28.44	6.46	37.49	2.17	1.32	5.81	1.69	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	31.11	7.11	44.13	2.35	1.42	6.21	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	27.33	7.65	37.11	2.15	1.36	5.27	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	30.07	7.76	44.83	2.32	1.46	5.86	1.90	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	32.82	8.53	51.63	2.51	1.57	6.45	1.98	7.000	.160	4.000	.220	1.22	89.3
6 X 2.56	29.27	9.16	46.23	2.34	1.58	5.05	2.18	6.000	.160	5.000	.250	1.06	119.0
7 X 2.65	32.11	10.07	54.66	2.53	1.70	5.42	2.26	6.500	.160	5.000	.250	1.14	117.3
7 X 2.75	34.96	10.99	63.76	2.72	1.82	5.80	2.34	7.000	.160	5.000	.250	1.22	115.6
8 X 3.10	37.79	12.39	75.80	2.92	2.01	6.12	2.64	7.500	.190	5.000	.250	1.54	114.5
8 X 3.21	40.65	13.42	87.61	3.11	2.14	6.48	2.74	8.000	.190	5.000	.250	1.64	113.3
6 X 3.28	31.26	12.65	59.64	2.57	1.91	4.72	2.80	6.000	.160	6.000	.313	1.06	148.0
7 X 3.38	34.20	13.84	70.21	2.77	2.05	5.07	2.88	6.500	.160	6.000	.313	1.14	145.6
7 X 3.47	37.17	15.06	81.73	2.98	2.20	5.43	2.96	7.000	.160	6.000	.313	1.22	143.5
8 X 3.82	40.13	16.71	95.86	3.18	2.39	5.74	3.26	7.500	.190	6.000	.313	1.54	141.8
8 X 3.94	43.12	18.03	109.04	3.38	2.54	6.08	3.35	8.000	.190	6.000	.313	1.64	140.2
9 X 4.34	46.13	19.69	126.80	3.57	2.75	6.38	3.70	8.500	.220	6.000	.313	2.01	138.7
9 X 4.47	49.14	21.51	145.07	3.77	2.91	6.71	3.81	9.000	.220	6.000	.313	2.12	137.4
10 X 4.80	52.15	22.70	166.44	3.97	3.08	7.05	3.92	9.500	.220	6.000	.313	2.23	136.2
9 X 4.76	47.10	22.80	169.37	3.68	2.96	6.17	4.06	8.500	.220	6.000	.375	2.01	138.7
9 X 4.89	50.17	24.19	157.09	3.86	3.13	6.49	4.17	9.000	.220	6.000	.375	2.12	137.4
10 X 5.02	53.25	25.80	175.99	4.09	3.30	6.82	4.28	9.500	.220	6.000	.375	2.23	136.2
10 X 5.50	56.45	28.11	199.39	4.27	3.53	7.09	4.58	10.000	.250	6.000	.375	2.66	135.0
11 X 5.64	59.57	29.84	221.20	4.47	3.71	7.41	4.81	10.500	.250	6.000	.375	2.78	134.0
11 X 5.79	62.71	31.60	244.29	4.67	3.90	7.73	4.93	11.000	.250	6.000	.375	2.91	132.9

10.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 6.25 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	57.39	31.27	215.05	4.36	3.75	6.38	5.05	10.000	.250	5.000	.438	2.66	135.0
11 X 6.07	60.57	33.16	238.40	4.57	3.94	7.19	5.17	10.500	.250	5.000	.438	2.78	134.0
11 X 6.21	63.77	35.08	263.09	4.77	4.13	7.50	5.30	11.000	.250	6.000	.438	2.91	132.9
12 X 7.38	70.81	40.07	327.14	5.11	4.52	8.00	6.29	12.000	.313	6.000	.438	3.95	131.0
13 X 7.56	74.12	43.03	357.31	5.31	4.82	8.30	6.45	12.500	.313	6.000	.438	4.11	130.1
13 X 7.98	75.17	46.76	378.35	5.38	5.03	8.09	6.80	12.500	.313	6.000	.500	4.11	130.1
13 X 8.16	78.50	49.10	411.09	5.58	5.24	8.38	6.95	13.000	.313	6.000	.500	4.26	129.2
14 X 8.35	81.97	51.48	446.62	5.78	5.45	8.68	7.11	13.500	.313	6.000	.500	4.42	128.4

10.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA= 7.50 SQ. IN.)

NUM. D X LB/FT	ΣPL	ΣFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.18	.55	.99	.35	.46	1.79	.43	1.500	.125	2.000	.125	.28	53.2
2 X .58	3.52	.76	1.71	.46	.49	2.20	.49	2.000	.125	2.000	.125	.34	49.3
3 X .65	5.14	.98	2.67	.58	.52	2.73	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	7.00	1.22	3.90	.69	.56	3.19	.62	3.000	.125	2.000	.125	.47	45.6
3 X .72	5.76	1.15	3.11	.62	.54	2.71	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	7.76	1.42	4.51	.74	.58	3.17	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	9.95	1.72	6.22	.87	.63	3.62	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	12.30	2.03	8.27	1.00	.67	4.08	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	14.80	2.30	10.69	1.15	.72	4.53	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	17.40	2.71	13.49	1.27	.78	4.97	.93	5.000	.125	2.500	.125	.72	54.6
4 X 1.13	14.41	2.70	10.79	1.15	.75	4.00	.97	4.000	.125	3.000	.160	.59	70.1
5 X 1.16	20.09	3.06	16.71	1.40	.83	5.42	.99	5.500	.125	2.500	.125	.78	53.7
5 X 1.21	17.11	3.11	13.81	1.27	.81	4.44	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	19.91	3.54	17.28	1.42	.87	4.88	1.09	5.000	.125	3.000	.160	.72	67.5
5 X 1.35	22.77	3.99	21.21	1.57	.93	5.32	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.60	17.79	4.27	16.37	1.36	.92	3.83	1.36	4.000	.125	4.000	.220	.59	98.7
5 X 1.67	20.82	4.88	20.74	1.52	1.00	4.25	1.42	4.500	.125	4.000	.220	.66	96.4
5 X 1.87	26.10	4.86	27.85	1.70	1.06	5.69	1.43	5.000	.160	3.000	.160	1.08	65.5
5 X 1.74	23.90	5.50	25.70	1.69	1.08	4.67	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	29.08	5.41	33.08	1.92	1.14	6.11	1.51	6.500	.160	3.000	.160	1.10	64.6
5 X 1.82	27.04	6.14	31.26	1.80	1.16	5.09	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.86	32.10	5.99	39.12	2.07	1.22	6.93	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	28.31	5.93	33.10	1.91	1.17	5.58	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.98	31.39	6.57	39.40	2.07	1.25	6.00	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	34.51	7.23	46.35	2.24	1.34	6.41	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	30.30	7.17	39.15	2.05	1.29	5.46	1.82	6.000	.160	4.000	.220	1.08	91.6
7 X 2.22	33.49	7.91	46.40	2.22	1.39	5.86	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	36.63	8.58	54.38	2.40	1.48	6.27	1.98	7.000	.160	4.000	.220	1.24	89.3
6 X 2.56	32.85	9.52	49.01	2.25	1.49	5.26	2.18	6.000	.160	5.000	.250	1.08	119.0
7 X 2.65	36.17	10.24	57.84	2.43	1.60	5.65	2.26	6.500	.160	5.000	.250	1.16	117.3
7 X 2.75	39.56	11.17	67.50	2.62	1.71	6.04	2.34	7.000	.160	5.000	.250	1.24	115.8
8 X 3.10	42.04	12.60	80.35	2.61	1.88	6.37	2.64	7.500	.190	5.000	.250	1.57	114.5
8 X 3.21	46.18	13.65	96.18	3.00	2.00	6.75	2.74	8.000	.190	5.000	.250	1.66	113.3
6 X 3.28	35.52	12.87	83.76	2.49	1.79	4.96	2.80	6.000	.160	6.000	.313	1.08	148.0
7 X 3.38	38.99	14.06	74.99	2.69	1.92	5.33	2.88	6.500	.160	6.000	.313	1.16	145.6
7 X 3.47	42.47	15.31	87.21	2.89	2.05	5.70	2.96	7.000	.160	6.000	.313	1.24	143.5
8 X 3.82	45.93	17.00	102.35	3.08	2.23	6.02	3.26	7.500	.190	6.000	.313	1.57	141.6
8 X 3.94	49.42	18.33	117.00	3.28	2.37	6.36	3.35	8.000	.190	6.000	.313	1.66	140.2
9 X 4.34	52.91	20.24	135.42	3.48	2.56	6.69	3.70	8.500	.220	6.000	.313	2.04	138.7
9 X 4.47	56.42	21.89	152.75	3.68	2.71	7.04	3.81	9.000	.220	6.000	.313	2.15	137.4
10 X 4.80	59.94	23.17	171.26	3.87	2.80	7.39	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	54.19	23.01	149.40	3.60	2.75	6.49	4.06	8.500	.220	6.000	.375	2.04	138.7
9 X 4.89	57.78	24.62	168.33	3.80	2.91	6.84	4.17	9.000	.220	6.000	.375	2.15	137.4
10 X 5.22	61.37	26.26	188.51	4.00	3.07	7.18	4.28	9.500	.220	6.000	.375	2.26	136.2
10 X 5.50	65.02	28.64	213.73	4.19	3.29	7.46	4.58	10.000	.250	6.000	.375	2.09	135.0
11 X 5.64	68.64	30.41	237.06	4.39	3.45	7.80	4.81	10.500	.250	6.000	.375	2.81	134.0
11 X 5.79	72.27	32.20	261.75	4.59	3.62	8.13	4.93	11.000	.250	6.000	.375	2.94	132.9

10.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA= 7.50 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	66.22	31.86	231.23	4.29	3.49	7.26	5.05	10.000	.250	5.000	.438	2.69	135.0
11 X 6.87	69.91	33.79	256.26	4.50	3.57	7.58	5.17	10.500	.250	5.000	.438	2.81	134.0
11 X 6.21	73.61	35.75	282.72	4.70	3.64	7.91	5.30	11.000	.250	5.000	.438	2.94	132.9
12 X 7.38	81.47	41.74	351.91	5.05	4.32	8.43	6.29	12.000	.313	5.000	.438	3.99	131.0
13 X 7.56	85.27	43.95	384.29	5.25	4.51	8.74	6.45	12.500	.313	6.000	.438	4.15	130.1
13 X 7.98	88.56	47.76	407.82	5.34	4.71	8.54	6.80	12.500	.313	6.000	.500	4.15	130.1
13 X 8.16	90.44	50.16	443.04	5.54	4.91	8.84	6.95	13.000	.313	6.000	.500	4.30	129.2
14 X 8.35	94.34	52.59	481.19	5.74	5.10	9.15	7.11	13.500	.313	6.000	.500	4.46	128.4

10.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA= 8.75 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.11	.58	1.08	.34	.51	1.87	.43	1.500	.125	2.000	.125	.30	53.2
2 X .56	3.41	.76	1.83	.45	.54	2.34	.49	2.000	.125	2.000	.125	.36	49.3
3 X .65	5.00	1.01	2.83	.55	.57	2.81	.55	2.500	.125	2.000	.125	.42	47.3
3 X .72	6.86	1.26	4.11	.65	.60	3.28	.62	3.000	.125	2.000	.125	.48	45.8
3 X .72	5.05	1.16	3.30	.59	.59	2.79	.62	2.500	.125	2.500	.125	.42	61.7
3 X .80	7.05	1.46	4.75	.71	.62	3.25	.68	3.000	.125	2.500	.125	.48	59.5
4 X .87	9.90	1.76	6.53	.83	.66	3.72	.74	3.500	.125	2.500	.125	.55	57.9
4 X .94	12.34	2.07	8.66	.95	.70	4.17	.80	4.000	.125	2.500	.125	.61	56.6
5 X 1.02	14.97	2.41	11.16	1.08	.75	4.63	.87	4.500	.125	2.500	.125	.67	55.6
5 X 1.09	17.74	2.77	14.05	1.21	.79	5.08	.93	5.000	.125	2.500	.125	.73	54.8
4 X 1.13	14.09	2.75	11.30	1.03	.77	4.11	.97	4.000	.125	3.000	.160	.61	70.1
6 X 1.16	20.04	3.14	17.37	1.34	.84	5.53	.99	5.500	.125	2.500	.125	.80	53.7
5 X 1.21	17.58	3.17	14.43	1.21	.82	4.55	1.03	4.500	.125	3.000	.160	.67	68.7
5 X 1.26	20.00	3.60	16.42	1.35	.87	5.00	1.09	5.000	.125	3.000	.160	.73	67.5
6 X 1.35	25.72	4.06	22.09	1.49	.93	5.44	1.15	5.500	.125	3.000	.160	.80	60.5
4 X 1.60	18.05	4.36	17.22	1.31	.92	3.95	1.30	4.000	.125	4.000	.220	.61	93.7
5 X 1.67	21.96	4.90	21.76	1.46	.99	4.38	1.42	4.500	.125	4.000	.220	.67	96.4
5 X 1.87	27.54	4.94	28.82	1.68	1.05	5.63	1.43	6.000	.160	3.000	.160	1.10	65.5
5 X 1.74	25.36	5.59	26.91	1.62	1.06	4.81	1.48	5.000	.125	4.000	.220	.73	94.5
7 X 1.77	30.67	5.50	34.46	1.83	1.12	6.26	1.51	6.500	.160	3.000	.160	1.18	64.6
5 X 1.82	26.84	6.24	32.69	1.78	1.13	5.24	1.55	5.500	.125	4.000	.220	.80	93.0
7 X 1.86	34.26	6.09	40.71	1.96	1.19	6.69	1.59	7.000	.160	3.000	.160	1.26	63.8
6 X 1.88	30.17	6.33	34.57	1.83	1.15	5.73	1.61	6.000	.160	3.500	.190	1.10	78.4
7 X 1.98	33.64	6.08	41.10	1.98	1.22	6.15	1.69	6.500	.160	3.500	.190	1.18	77.4
7 X 2.07	37.14	7.35	48.32	2.14	1.30	6.57	1.77	7.000	.160	3.500	.190	1.26	76.4
6 X 2.13	32.60	7.29	40.97	1.97	1.26	5.62	1.82	6.000	.160	4.000	.220	1.10	91.6
7 X 2.22	36.19	8.04	48.51	2.13	1.34	6.03	1.90	6.500	.160	4.000	.220	1.18	90.4
7 X 2.32	39.82	8.81	56.81	2.30	1.43	6.45	1.98	7.000	.160	4.000	.220	1.26	89.3
8 X 2.36	35.77	9.47	51.48	2.17	1.44	5.44	2.18	6.000	.160	5.000	.250	1.10	119.0
7 X 2.65	39.53	10.39	66.70	2.35	1.54	5.84	2.26	6.500	.160	5.000	.250	1.18	117.3
7 X 2.75	43.31	11.34	78.77	2.53	1.63	6.24	2.34	7.000	.160	5.000	.250	1.26	115.8
8 X 3.10	47.17	12.66	84.32	2.72	1.79	6.59	2.64	7.500	.190	5.000	.250	1.59	114.5
8 X 3.21	50.98	13.66	96.70	2.90	1.80	6.98	2.74	8.000	.190	5.000	.250	1.69	113.3
8 X 3.28	39.22	13.07	67.40	2.42	1.72	5.16	2.80	6.000	.160	5.000	.313	1.10	148.0
7 X 3.36	43.10	14.29	79.18	2.61	1.83	5.54	2.88	6.500	.160	6.000	.313	1.18	145.6
7 X 3.47	47.15	15.53	92.00	2.80	1.95	5.92	2.96	7.000	.160	6.000	.313	1.26	143.5
8 X 3.82	51.08	17.20	108.02	3.00	2.11	6.26	3.26	7.500	.190	6.000	.313	1.59	141.8
8 X 3.94	55.37	18.80	123.41	3.19	2.24	6.63	3.35	8.000	.190	6.000	.313	1.69	140.2
9 X 4.34	59.05	20.36	142.95	3.39	2.42	6.95	3.70	8.500	.220	6.000	.313	2.06	138.7
9 X 4.47	63.05	22.02	161.16	3.58	2.56	7.32	3.81	9.000	.220	6.000	.313	2.17	137.4
10 X 4.60	67.07	23.52	180.66	3.78	2.69	7.68	3.92	9.500	.220	6.000	.313	2.28	136.2
9 X 4.76	60.69	23.37	156.10	3.51	2.51	6.77	4.06	8.500	.220	6.000	.375	2.06	138.7
9 X 4.89	64.77	25.00	178.12	3.71	2.75	7.12	4.17	9.000	.220	6.000	.375	2.17	137.4
10 X 5.02	68.86	26.66	199.41	3.91	2.90	7.48	4.28	9.500	.220	6.000	.375	2.28	136.2
10 X 5.30	72.96	29.10	226.25	4.10	3.10	7.77	4.58	10.000	.250	6.000	.375	2.72	135.0
11 X 5.64	77.10	30.89	250.86	4.30	3.25	8.12	4.81	10.500	.250	6.000	.375	2.84	134.0
11 X 5.79	81.23	32.72	276.96	4.50	3.41	8.47	4.93	11.000	.250	6.000	.375	2.97	132.9

10.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA= 8.75 SQ. IN.)

NUM. J	X	LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10	X	5.92	74.49	32.37	245.38	4.22	3.29	7.58	5.05	10.000	.250	5.000	.438	2.72	135.0
11	X	6.37	78.69	34.33	271.86	4.42	3.46	7.92	5.17	10.500	.250	5.000	.438	2.84	134.0
11	X	6.21	82.89	36.31	299.86	4.62	3.62	8.26	5.30	11.000	.250	6.000	.438	2.97	132.9
12	X	7.36	91.01	42.49	373.71	4.98	4.08	8.80	6.29	12.000	.313	6.000	.438	4.03	131.0
13	X	7.56	95.96	44.74	408.03	5.18	4.25	9.12	6.45	12.500	.313	6.000	.438	4.19	130.1
13	X	7.98	97.45	48.61	433.80	5.28	4.45	8.92	6.80	12.500	.313	6.000	.500	4.19	130.1
13	X	8.16	101.62	51.06	471.83	5.48	4.63	9.24	6.95	13.000	.313	6.000	.500	4.34	129.2
14	X	8.35	106.21	53.54	511.67	5.68	4.82	9.50	7.11	13.500	.313	6.000	.500	4.50	128.4

10.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=10.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.05	.60	1.16	.83	.57	1.93	.43	1.500	.125	2.000	.125	.31	53.2
2 X .56	3.31	.81	1.95	.43	.59	2.41	.49	2.000	.125	2.000	.125	.38	49.3
3 X .65	4.66	1.04	3.00	.53	.62	2.88	.55	2.500	.125	2.000	.125	.44	47.3
3 X .72	5.68	1.29	4.32	.64	.65	3.35	.62	3.000	.125	2.000	.125	.50	45.8
3 X .72	5.51	1.22	3.49	.57	.53	2.87	.62	2.500	.125	2.500	.125	.44	61.7
3 X .80	7.50	1.50	5.00	.68	.67	3.33	.68	3.000	.125	2.500	.125	.50	59.5
4 X .87	9.75	1.80	6.83	.80	.70	3.80	.74	3.500	.125	2.500	.125	.56	57.9
4 X .94	12.24	2.12	9.03	.91	.74	4.26	.80	4.000	.125	2.500	.125	.63	56.6
5 X 1.02	14.93	2.46	11.66	1.03	.78	4.72	.87	4.500	.125	2.500	.125	.69	55.6
5 X 1.09	17.80	2.82	14.59	1.16	.82	5.18	.93	5.000	.125	2.500	.125	.75	54.6
4 X 1.13	14.75	2.31	11.79	1.04	.80	4.20	.97	4.000	.125	3.000	.100	.63	70.1
5 X 1.16	20.84	3.19	18.01	1.28	.86	5.64	.99	5.500	.125	2.500	.125	.81	53.7
5 X 1.21	17.76	3.23	15.02	1.17	.85	4.65	1.03	4.500	.125	3.000	.100	.69	68.7
5 X 1.28	20.94	3.67	18.72	1.30	.89	5.11	1.09	5.000	.125	3.000	.100	.75	67.5
5 X 1.35	24.25	4.12	22.91	1.43	.94	5.56	1.15	5.500	.125	3.000	.100	.81	66.5
4 X 1.60	19.10	4.44	16.03	1.20	.84	4.06	1.36	4.000	.125	4.000	.220	.63	98.7
5 X 1.67	22.71	5.35	22.73	1.41	1.00	4.50	1.42	4.500	.125	4.000	.220	.69	96.4
5 X 1.67	20.49	5.03	29.92	1.62	1.05	5.95	1.43	6.000	.100	3.000	.100	1.12	65.5
5 X 1.74	26.37	5.08	26.05	1.56	1.06	4.94	1.48	5.000	.125	4.000	.220	.75	94.5
7 X 1.77	32.11	5.59	35.73	1.76	1.11	6.39	1.51	6.500	.160	3.000	.100	1.20	64.6
5 X 1.82	30.13	6.33	34.01	1.72	1.13	5.37	1.55	5.500	.125	4.000	.220	.81	93.0
7 X 1.86	35.00	6.18	42.18	1.91	1.18	6.82	1.59	7.000	.160	3.000	.160	1.28	63.8
6 X 1.88	31.50	6.13	35.92	1.76	1.14	5.86	1.61	6.000	.160	3.500	.190	1.12	78.4
7 X 1.98	35.26	6.78	42.67	1.91	1.21	6.29	1.69	6.500	.100	3.500	.190	1.20	77.4
7 X 2.07	39.13	7.46	50.12	2.08	1.28	6.72	1.77	7.000	.100	3.500	.190	1.28	76.4
6 X 2.13	34.33	7.40	42.04	1.90	1.24	5.76	1.82	6.000	.160	4.000	.220	1.12	91.6
7 X 2.22	38.27	8.16	50.44	2.08	1.32	6.18	1.90	6.500	.160	4.000	.220	1.20	90.4
7 X 2.32	42.27	8.94	59.02	2.22	1.40	6.60	1.98	7.000	.160	4.000	.220	1.28	89.3
6 X 2.56	38.11	9.61	53.74	2.18	1.41	5.59	2.18	6.000	.160	5.000	.250	1.12	119.0
7 X 2.65	42.27	10.54	63.29	2.27	1.50	6.00	2.26	6.500	.160	5.000	.250	1.20	117.3
7 X 2.75	46.46	11.50	73.73	2.44	1.59	6.41	2.34	7.000	.160	5.000	.250	1.28	115.8
8 X 3.10	50.82	12.98	87.96	2.64	1.73	6.77	2.64	7.500	.190	5.000	.250	1.62	114.5
8 X 3.21	55.08	14.05	100.75	2.81	1.83	7.17	2.74	8.000	.190	5.000	.250	1.71	113.3
6 X 3.28	42.35	13.20	70.70	2.35	1.67	5.33	2.86	6.000	.160	6.000	.313	1.12	148.0
7 X 3.38	46.74	14.49	82.97	2.54	1.78	5.72	2.88	6.500	.160	6.000	.313	1.20	145.6
7 X 3.47	51.10	15.74	96.31	2.73	1.88	6.12	2.96	7.000	.160	6.000	.313	1.28	143.5
8 X 3.82	55.00	17.50	113.12	2.92	2.03	6.47	3.26	7.500	.190	6.000	.313	1.62	141.8
8 X 3.94	60.00	18.86	129.15	3.11	2.15	6.85	3.35	8.000	.190	6.000	.313	1.71	140.2
9 X 4.34	64.55	20.64	149.08	3.31	2.32	7.18	3.70	8.500	.220	6.000	.313	2.09	138.7
9 X 4.47	69.43	22.33	168.76	3.50	2.44	7.56	3.81	9.000	.220	6.000	.313	2.20	137.4
10 X 4.60	73.53	23.84	189.02	3.69	2.57	7.93	3.92	9.500	.220	6.000	.313	2.31	136.2
9 X 4.76	66.57	23.69	165.99	3.44	2.49	7.01	4.06	8.500	.220	6.000	.375	2.09	138.7
9 X 4.89	71.14	25.34	186.86	3.63	2.63	7.37	4.17	9.000	.220	6.000	.375	2.20	137.4
10 X 5.02	75.73	27.02	209.11	3.83	2.76	7.74	4.28	9.500	.220	6.000	.375	2.31	136.2
10 X 5.50	80.36	29.51	257.41	4.02	2.96	8.04	4.68	10.000	.250	6.000	.375	2.75	135.0
11 X 5.64	84.94	31.33	283.19	4.22	3.10	8.40	4.81	10.500	.250	6.000	.375	2.86	134.0
11 X 5.79	89.57	33.17	290.49	4.41	3.24	8.76	4.93	11.000	.250	6.000	.375	3.00	132.9

10.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=10.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	82.18	32.83	258.02	4.14	3.14	7.86	5.05	10.000	.250	6.000	.438	2.75	135.0
11 X 6.07	86.87	34.01	285.78	4.34	3.29	8.21	5.17	10.500	.250	5.000	.438	2.88	134.0
11 X 6.21	91.57	36.82	315.13	4.54	3.44	8.56	5.30	11.000	.250	6.000	.438	3.00	132.9
12 X 7.36	101.20	43.14	393.22	4.91	3.89	9.11	6.29	12.000	.313	6.000	.438	4.07	131.0
13 X 7.56	105.97	45.43	429.28	5.11	4.05	9.45	6.45	12.500	.313	6.000	.438	4.23	130.1
13 X 7.96	107.81	49.36	457.10	5.22	4.24	9.26	6.86	12.500	.313	6.000	.500	4.23	130.1
13 X 8.16	112.07	51.04	497.09	5.41	4.41	9.59	6.95	13.000	.313	6.000	.500	4.38	129.2
14 X 8.35	117.55	54.36	536.99	5.61	4.59	9.91	7.11	13.500	.313	6.000	.500	4.54	128.4

TABLE 4

EFFECTIVE PLATING WIDTH = 12"

3/8" - 1" PLATING THICKNESSES

12.0 IN. EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 4.50 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.51	.48	.76	.39	.30	1.57	.43	1.500	.125	2.000	.125	.23	53.2
2 X .56	3.94	.67	1.37	.52	.35	2.03	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	5.52	.89	2.20	.65	.40	2.48	.55	2.500	.125	2.000	.125	.36	47.3
3 X .72	7.20	1.12	3.27	.80	.45	2.92	.62	3.000	.125	2.000	.125	.42	45.8
3 X .72	5.38	1.05	2.56	.71	.43	2.45	.62	2.500	.125	2.500	.125	.36	61.7
3 X .80	7.72	1.51	3.78	.85	.49	2.89	.68	3.000	.125	2.500	.125	.42	59.5
4 X .87	9.52	1.59	5.28	1.00	.56	3.32	.74	3.500	.125	2.500	.125	.48	57.9
4 X .94	11.35	1.89	7.16	1.16	.63	3.75	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	13.20	2.21	9.24	1.31	.70	4.18	.87	4.500	.125	2.500	.125	.61	55.6
5 X 1.09	15.17	2.55	11.72	1.47	.78	4.60	.93	5.000	.125	2.500	.125	.67	54.6
4 X 1.13	12.52	2.52	9.19	1.30	.73	3.04	.97	4.000	.125	3.000	.160	.55	70.1
6 X 1.16	16.95	2.91	14.58	1.63	.86	5.01	.99	5.500	.125	2.500	.125	.73	53.7
5 X 1.21	14.46	2.92	11.85	1.46	.82	4.06	1.03	4.500	.125	3.000	.160	.61	68.7
5 X 1.28	16.40	3.34	14.91	1.63	.91	4.47	1.09	5.000	.125	3.000	.160	.67	67.5
5 X 1.35	18.35	3.77	18.36	1.80	1.00	4.87	1.15	5.500	.125	3.000	.160	.73	66.5
4 X 1.50	14.11	4.01	13.06	1.53	.97	3.41	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.57	16.17	4.56	17.45	1.72	1.06	3.80	1.42	4.500	.125	4.000	.220	.61	96.4
6 X 1.67	20.29	4.58	23.83	2.01	1.17	5.20	1.43	6.000	.160	3.000	.160	1.02	69.5
5 X 1.74	18.24	5.20	21.76	1.91	1.19	4.18	1.48	5.000	.125	4.000	.220	.67	94.5
7 X 1.77	22.24	5.11	28.57	2.18	1.26	5.59	1.51	6.500	.160	3.000	.160	1.10	64.6
6 X 1.82	20.31	5.82	26.59	2.10	1.31	4.57	1.55	5.500	.125	4.000	.220	.73	93.0
7 X 1.86	24.19	5.06	33.84	2.36	1.40	5.98	1.59	7.000	.160	3.000	.160	1.18	63.8
6 X 1.88	21.39	5.91	26.62	2.15	1.32	5.05	1.61	6.000	.160	3.500	.190	1.02	78.4
7 X 1.98	23.39	6.22	33.78	2.34	1.44	5.43	1.69	6.500	.160	3.500	.190	1.10	77.4
7 X 2.07	25.40	6.86	39.82	2.52	1.57	5.81	1.77	7.000	.160	3.500	.190	1.18	76.4
6 X 2.13	22.32	6.79	36.19	2.29	1.49	4.89	1.82	6.000	.160	4.000	.220	1.02	91.6
7 X 2.22	24.36	7.50	39.44	2.48	1.62	5.26	1.96	6.500	.160	4.000	.220	1.10	90.4
7 X 2.32	26.45	8.23	46.51	2.67	1.75	5.62	1.98	7.000	.160	4.000	.220	1.18	89.3
6 X 2.36	23.43	8.84	46.96	2.47	1.75	4.63	2.18	6.000	.160	5.000	.250	1.02	119.0
7 X 2.45	25.57	9.72	48.42	2.68	1.89	4.98	2.20	6.500	.160	5.000	.250	1.10	117.3
7 X 2.75	27.71	10.62	56.03	2.88	2.04	5.33	2.34	7.000	.160	5.000	.250	1.18	115.8
8 X 3.10	29.66	11.95	67.21	3.07	2.25	5.82	2.64	7.500	.190	5.000	.250	1.50	114.5
8 X 3.21	32.02	12.95	77.22	3.27	2.41	5.96	2.74	8.000	.190	5.000	.250	1.59	113.3
6 X 3.26	24.48	12.20	51.90	2.67	2.12	4.25	2.80	6.000	.160	6.000	.313	1.02	148.0
7 X 3.36	26.71	13.37	61.26	2.85	2.29	4.58	2.88	6.500	.160	6.000	.313	1.10	145.6
7 X 3.47	28.95	14.50	71.44	3.09	2.47	4.91	2.96	7.000	.160	6.000	.313	1.18	143.5
8 X 3.62	31.25	16.13	83.76	3.29	2.68	5.19	3.26	7.500	.190	6.000	.313	1.50	141.8
8 X 3.94	33.52	17.41	95.95	3.50	2.86	5.51	3.35	8.000	.190	6.000	.313	1.59	140.2
9 X 4.34	39.96	19.16	110.89	3.68	3.09	5.79	3.70	8.500	.220	6.000	.313	1.95	138.7
9 X 4.47	38.20	20.54	125.24	3.85	3.28	6.10	3.81	9.000	.220	6.000	.313	2.06	137.4
10 X 4.60	43.92	21.94	140.56	4.09	3.47	6.41	3.92	9.500	.220	6.000	.313	2.17	136.2
9 X 4.70	36.49	21.78	121.04	3.70	3.32	5.56	4.06	8.500	.220	6.000	.375	1.95	138.7
9 X 4.89	38.84	23.32	136.80	3.97	3.52	5.86	4.17	9.000	.220	6.000	.375	2.06	137.4
10 X 5.02	41.21	24.68	153.18	4.18	3.72	6.16	4.28	9.500	.220	6.000	.375	2.17	136.2
9 X 5.42	37.34	25.08	136.20	3.87	3.65	5.23	4.62	8.500	.220	7.500	.375	1.95	180.4
10 X 5.90	43.63	27.04	173.50	4.35	3.96	6.42	4.68	10.000	.250	6.000	.375	2.59	135.0
9 X 5.55	39.76	27.66	153.58	4.08	3.86	5.51	4.73	9.000	.220	7.500	.375	2.06	178.5
11 X 5.64	46.25	28.71	192.64	4.55	4.16	6.71	4.81	10.500	.250	6.000	.375	2.72	134.0
10 X 5.66	42.19	29.67	172.02	4.29	4.08	5.80	4.84	9.500	.220	7.500	.375	2.17	176.8
11 X 5.79	48.70	30.40	212.98	4.75	4.37	7.00	4.93	11.000	.250	6.000	.375	2.84	132.9

12.0 IN. EFFECTIVE WIDTH

.375 IN. PLATE (AREA= 4.5) SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	44.43	30.07	186.07	4.42	4.19	6.19	5.05	10.000	.250	6.000	.438	2.59	135.0
11 X 6.07	46.91	31.90	200.48	4.62	4.40	6.47	5.17	10.500	.250	5.000	.438	2.72	134.0
10 X 6.16	44.93	32.05	194.06	4.46	4.32	6.06	5.25	10.000	.250	7.500	.375	2.59	175.2
11 X 6.21	49.40	33.74	220.06	4.63	4.52	6.76	5.30	11.000	.250	6.000	.438	2.84	132.9
11 X 6.30	47.43	33.96	215.20	4.67	4.54	6.34	5.37	10.500	.250	7.500	.375	2.72	173.8
11 X 6.45	49.94	35.89	237.55	4.87	4.76	6.82	5.50	11.000	.250	7.500	.375	2.84	172.4
12 X 7.38	55.38	39.14	263.78	5.13	5.12	7.25	6.29	12.000	.313	6.000	.438	3.87	131.0
10 X 7.56	56.02	41.20	310.19	5.32	5.39	7.03	6.45	12.500	.313	6.000	.438	4.03	130.1
12 X 7.62	56.03	41.46	294.87	5.18	5.20	7.11	6.49	12.000	.313	7.500	.375	3.87	169.9
10 X 7.80	58.70	43.61	322.13	5.36	5.49	7.39	6.65	12.500	.313	7.500	.375	4.03	168.8
10 X 7.96	58.77	44.77	327.20	5.38	5.57	7.31	6.80	12.500	.313	8.000	.500	4.03	130.1
10 X 7.99	61.39	45.78	350.76	5.57	5.71	7.06	6.81	13.000	.313	7.500	.375	4.19	167.7
13 X 8.10	61.48	47.01	356.32	5.58	5.80	7.08	6.95	13.000	.313	8.000	.500	4.19	129.2
14 X 8.17	64.10	47.99	380.79	5.76	5.94	7.93	6.90	13.500	.313	7.500	.375	4.34	166.7
14 X 8.35	64.22	49.20	386.87	5.77	6.02	7.85	7.11	13.500	.313	8.000	.500	4.34	128.4
12 X 8.41	67.27	48.18	423.83	5.27	5.65	8.72	7.10	12.000	.313	8.000	.438	3.87	183.2
13 X 8.59	68.03	50.61	453.52	5.47	5.89	8.99	7.32	12.500	.313	8.000	.438	4.03	182.0
13 X 8.78	69.66	53.06	484.66	5.67	6.13	7.25	7.48	13.000	.313	8.000	.438	4.19	180.8
14 X 8.96	65.60	55.54	417.32	5.86	6.36	7.51	7.63	13.500	.313	8.000	.438	4.34	179.7
12 X 8.97	67.91	52.77	441.70	5.31	5.90	8.47	7.54	12.000	.313	8.000	.500	3.87	183.2
13 X 9.15	68.71	55.40	372.95	5.51	6.14	8.73	7.80	12.500	.313	8.000	.500	4.03	182.0
13 X 9.34	69.53	58.05	405.72	5.71	6.39	8.99	7.95	13.000	.313	8.000	.500	4.19	180.8
14 X 9.52	70.38	58.73	440.05	5.91	6.03	7.25	8.11	13.500	.313	8.000	.500	4.34	179.7

12.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 5.25 SQ. IN.)

NUM. J	X	LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.56	2.50	.49	.80	.37	.32	1.62	.43	1.500	.125	2.000	.125	.24	53.2
2	X	.58	3.37	.69	1.43	.50	.36	2.08	.49	2.000	.125	2.000	.125	.30	49.3
3	X	.65	5.65	.90	2.29	.63	.41	2.53	.55	2.500	.125	2.000	.125	.37	47.3
3	X	.72	7.47	1.14	3.40	.78	.46	2.98	.62	3.000	.125	2.000	.125	.43	45.8
3	X	.72	6.18	1.06	2.67	.67	.43	2.51	.62	2.500	.125	2.500	.125	.37	61.7
3	X	.80	8.08	1.33	3.92	.81	.49	2.95	.68	3.000	.125	2.500	.125	.43	59.5
4	X	.87	10.07	1.81	5.48	.98	.54	3.39	.74	3.500	.125	2.500	.125	.49	57.9
4	X	.94	12.12	1.92	7.35	1.10	.61	3.83	.80	4.000	.125	2.500	.125	.55	56.6
5	X	1.02	14.22	2.64	9.56	1.25	.67	4.27	.87	4.500	.125	2.500	.125	.62	55.6
5	X	1.09	16.34	2.58	12.12	1.40	.74	4.70	.93	5.000	.125	2.500	.125	.68	54.6
4	X	1.13	13.56	2.56	9.55	1.24	.70	3.73	.97	4.000	.125	3.000	.160	.55	70.1
5	X	1.16	18.48	2.94	15.07	1.55	.82	5.12	.99	5.500	.125	2.500	.125	.74	53.7
5	X	1.21	19.76	2.96	12.30	1.40	.78	4.16	1.03	4.500	.125	3.000	.160	.62	68.7
5	X	1.28	17.98	3.38	15.40	1.56	.86	4.58	1.09	5.000	.125	3.000	.160	.68	67.5
6	X	1.35	20.21	3.82	19.06	1.73	.94	4.99	1.15	5.500	.125	3.000	.160	.74	66.5
4	X	1.50	15.59	4.06	14.30	1.47	.92	3.52	1.36	4.000	.125	4.000	.220	.55	98.7
5	X	1.67	17.94	4.65	18.24	1.65	1.02	3.92	1.42	4.500	.125	4.000	.220	.62	96.4
6	X	1.87	22.49	4.84	24.76	1.93	1.10	5.34	1.43	6.000	.160	3.000	.160	1.03	65.5
5	X	1.74	20.31	5.26	22.72	1.84	1.12	4.32	1.48	5.000	.125	4.000	.220	.68	94.5
7	X	1.77	24.73	5.18	29.70	2.10	1.20	5.74	1.51	6.500	.160	3.000	.160	1.11	64.6
6	X	1.82	22.68	5.89	27.76	2.02	1.22	4.71	1.55	5.500	.125	4.000	.220	.74	93.0
7	X	1.86	26.97	5.74	35.18	2.27	1.30	5.13	1.59	7.000	.160	3.000	.160	1.19	63.8
6	X	1.98	23.84	5.58	29.51	2.07	1.24	5.20	1.61	6.000	.160	3.500	.190	1.03	78.4
7	X	1.98	26.14	6.30	35.21	2.25	1.35	5.59	1.69	6.500	.160	3.500	.190	1.11	77.4
7	X	2.07	28.45	6.94	41.50	2.43	1.46	5.98	1.77	7.000	.160	3.500	.190	1.19	76.4
6	X	2.13	25.06	6.87	34.70	2.22	1.39	5.05	1.82	6.000	.160	4.000	.220	1.03	91.6
7	X	2.22	27.36	7.59	41.23	2.40	1.51	5.43	1.90	6.500	.160	4.000	.220	1.11	90.4
7	X	2.32	29.73	8.33	48.42	2.59	1.63	5.81	1.98	7.000	.160	4.000	.220	1.19	89.3
6	X	2.56	26.40	8.94	43.60	2.41	1.63	4.81	2.18	6.000	.160	5.000	.250	1.03	119.0
7	X	2.65	28.85	9.83	50.88	2.60	1.76	5.17	2.26	6.500	.160	5.000	.250	1.11	117.3
7	X	2.75	31.31	10.75	59.51	2.80	1.90	5.54	2.34	7.000	.160	5.000	.250	1.19	115.8
5	X	3.10	33.74	12.10	70.71	2.99	2.10	5.84	2.64	7.500	.190	5.000	.250	1.51	114.5
8	X	3.21	36.20	13.12	81.24	3.19	2.24	6.19	2.74	8.000	.190	5.000	.250	1.60	113.3
6	X	3.28	27.76	12.35	55.62	2.61	1.98	4.46	2.80	6.000	.160	5.000	.313	1.03	148.0
7	X	3.38	30.32	13.53	64.96	2.83	2.14	4.80	2.88	6.500	.160	6.000	.313	1.11	145.6
7	X	3.47	32.88	14.73	75.07	3.04	2.30	5.14	2.96	7.000	.160	6.000	.313	1.19	143.5
8	X	3.82	35.46	16.34	88.78	3.23	2.50	5.43	3.26	7.500	.190	6.000	.313	1.51	141.8
8	X	3.94	38.04	17.63	101.65	3.44	2.67	5.77	3.35	8.000	.190	6.000	.313	1.60	140.2
9	X	4.34	40.68	19.44	117.55	3.62	2.89	6.05	3.70	8.500	.220	6.000	.313	1.97	138.7
8	X	4.47	43.29	20.83	132.74	3.83	3.07	6.37	3.81	9.000	.220	6.000	.313	2.08	137.4
10	X	4.90	45.91	22.26	148.97	4.03	3.24	6.69	3.92	9.500	.220	6.000	.313	2.19	136.2
9	X	4.75	41.40	22.09	128.75	3.72	3.11	5.83	4.06	8.500	.220	6.000	.375	1.97	138.7
9	X	4.83	44.07	23.65	142.25	3.93	3.30	6.14	4.17	9.000	.220	6.000	.375	2.08	137.4
10	X	5.02	46.75	25.24	162.86	4.13	3.48	6.45	4.26	9.500	.220	6.000	.375	2.19	136.2
9	X	5.42	42.43	26.45	145.62	3.84	3.43	5.51	4.62	8.500	.220	7.500	.375	1.97	180.4
10	X	5.50	44.01	27.40	164.51	4.01	3.72	6.72	4.58	10.000	.250	6.000	.375	2.61	135.0
9	X	5.35	45.17	28.26	164.07	4.05	3.63	5.61	4.73	9.000	.220	7.500	.375	2.08	178.5
11	X	5.64	52.34	29.16	204.82	4.51	3.91	7.02	4.81	10.500	.250	6.000	.375	2.73	134.0
10	X	5.66	47.92	30.10	183.71	4.27	3.83	6.10	4.84	9.500	.220	7.500	.375	2.19	176.8
11	X	5.79	55.08	30.88	226.33	4.71	4.11	7.33	4.93	11.000	.250	6.000	.375	2.86	132.9

12.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 5.25 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	50.34	30.55	198.42	4.39	3.94	6.50	5.05	10.000	.250	5.000	.438	2.61	135.0
11 X 6.07	53.12	32.40	220.12	4.60	4.14	6.79	5.17	10.500	.250	5.000	.438	2.73	134.0
10 X 6.16	50.91	32.54	207.21	4.44	4.07	6.37	5.25	10.000	.250	7.500	.375	2.61	175.2
11 X 6.21	55.91	34.28	243.07	4.60	4.35	7.09	5.30	11.000	.250	6.000	.438	2.86	132.9
11 X 6.30	53.72	34.49	229.72	4.65	4.28	6.80	5.37	10.500	.250	7.500	.375	2.73	173.8
11 X 6.45	56.54	36.46	253.51	4.80	4.48	6.95	5.50	11.000	.250	7.500	.375	2.86	172.4
12 X 7.36	62.34	39.85	302.36	5.12	4.85	7.59	6.29	12.000	.313	6.000	.438	3.89	131.0
10 X 7.50	59.26	41.96	330.45	5.32	5.06	7.38	6.45	12.500	.313	6.000	.438	4.05	130.1
12 X 7.62	63.08	42.21	314.51	5.18	4.99	7.45	6.49	12.000	.313	7.500	.375	3.89	169.9
13 X 7.80	66.04	44.40	343.50	5.37	5.20	7.74	6.65	12.500	.313	7.500	.375	4.05	168.8
12 X 7.96	66.14	45.00	349.26	5.38	5.26	7.66	6.80	12.500	.313	8.000	.500	4.05	130.1
13 X 7.99	69.02	46.63	375.94	5.57	5.42	8.02	6.81	13.000	.313	7.500	.375	4.21	167.7
13 X 8.16	69.14	47.69	380.19	5.58	5.50	7.94	6.95	13.000	.313	8.000	.500	4.21	129.2
14 X 8.17	72.33	48.08	405.85	5.76	5.63	8.30	6.96	13.500	.313	7.500	.375	4.36	166.7
14 X 8.35	72.17	50.21	412.00	5.78	5.72	8.22	7.11	13.500	.313	8.000	.500	4.36	128.4
12 X 8.41	64.52	49.05	340.58	5.28	5.37	7.07	7.16	12.000	.313	8.000	.438	3.89	183.2
13 X 8.54	67.57	51.53	378.21	5.48	5.60	7.34	7.32	12.500	.313	8.000	.438	4.05	182.0
13 X 8.76	70.64	54.03	411.39	5.69	5.82	7.61	7.48	13.000	.313	8.000	.438	4.21	180.8
14 X 8.90	73.73	56.57	446.15	5.88	6.05	7.89	7.53	13.500	.313	8.000	.438	4.36	179.7
12 X 8.97	65.26	53.73	366.52	5.33	5.02	6.82	7.64	12.000	.313	8.000	.500	3.89	183.2
13 X 9.19	68.36	56.41	399.86	5.54	5.85	7.09	7.80	12.500	.313	8.000	.500	4.05	182.0
13 X 9.34	71.46	59.12	434.81	5.74	6.08	7.35	7.95	13.000	.313	8.000	.500	4.21	180.8
14 X 9.52	74.63	61.86	471.41	5.94	6.32	7.62	8.11	13.500	.313	8.000	.500	4.36	179.7

12.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 6.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.46	.50	.84	.36	.34	1.66	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	3.95	.78	1.49	.48	.38	2.12	.49	2.000	.125	2.000	.125	.31	49.3
3 X .55	5.08	.92	2.37	.60	.42	2.58	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	7.00	1.16	3.51	.73	.46	3.04	.62	3.000	.125	2.000	.125	.44	45.8
3 X .72	6.27	1.08	2.77	.65	.44	2.56	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	8.26	1.35	4.00	.78	.49	3.01	.68	3.000	.125	2.500	.125	.44	59.5
4 X .67	10.43	1.64	5.06	.92	.54	3.46	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	12.66	1.94	7.58	1.06	.60	3.90	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	14.97	2.27	9.89	1.20	.66	4.34	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	17.32	2.61	12.46	1.34	.72	4.78	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	14.36	2.59	9.87	1.19	.69	3.81	.97	4.000	.125	3.000	.100	.56	70.1
5 X 1.16	19.71	2.98	15.91	1.49	.79	5.21	.99	5.000	.125	2.500	.125	.75	53.7
5 X 1.21	16.79	2.99	12.70	1.34	.76	4.24	1.03	4.500	.125	3.000	.100	.63	66.7
5 X 1.28	19.20	3.42	15.95	1.50	.83	4.67	1.09	5.000	.125	3.000	.100	.69	67.5
5 X 1.35	21.70	3.86	19.00	1.66	.90	5.10	1.15	5.500	.125	3.000	.100	.75	66.5
4 X 1.60	18.83	4.21	14.00	1.42	.88	3.62	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	19.40	4.70	18.94	1.60	.97	4.03	1.42	4.500	.125	4.000	.220	.63	96.4
5 X 1.87	24.39	4.69	25.59	1.86	1.05	5.45	1.43	6.000	.160	3.000	.160	1.04	65.5
5 X 1.74	22.12	5.32	25.27	1.77	1.07	4.43	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	26.91	5.24	30.68	2.02	1.14	5.86	1.51	6.500	.160	3.000	.160	1.12	64.6
5 X 1.82	24.78	5.95	28.78	1.95	1.16	4.84	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	29.43	5.80	36.34	2.19	1.23	6.27	1.59	7.000	.160	3.000	.160	1.20	63.8
6 X 1.88	26.01	5.74	30.56	2.00	1.16	5.32	1.61	6.000	.160	3.500	.190	1.04	78.4
7 X 1.98	28.60	6.37	36.45	2.18	1.27	5.73	1.69	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	31.19	7.02	42.96	2.35	1.38	6.12	1.77	7.000	.160	3.500	.190	1.20	76.4
6 X 2.13	27.41	6.95	36.03	2.15	1.31	5.19	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	30.07	7.67	42.80	2.33	1.42	5.58	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	32.74	8.42	50.25	2.51	1.53	5.97	1.98	7.000	.160	4.000	.220	1.20	89.3
6 X 2.56	29.13	9.04	44.64	2.34	1.54	4.90	2.18	6.000	.160	5.000	.250	1.04	119.0
7 X 2.65	31.90	9.94	53.04	2.53	1.66	5.34	2.26	6.500	.160	5.000	.250	1.12	117.3
7 X 2.75	34.66	10.86	62.02	2.73	1.79	5.71	2.34	7.000	.160	5.000	.250	1.20	115.8
8 X 3.10	37.38	12.24	75.77	2.92	1.97	6.03	2.64	7.500	.190	5.000	.250	1.52	114.5
8 X 3.21	40.15	13.26	84.74	3.11	2.11	6.39	2.74	8.000	.190	5.000	.250	1.62	113.3
8 X 3.26	38.84	12.40	87.76	2.96	1.87	4.63	2.80	8.000	.160	6.000	.313	1.04	148.0
7 X 3.38	33.72	13.67	68.10	2.77	2.12	4.98	2.88	8.500	.160	6.000	.313	1.12	145.6
7 X 3.47	36.00	14.89	79.37	2.98	2.17	5.33	2.96	7.000	.160	6.000	.313	1.20	143.5
8 X 3.62	39.47	16.52	93.16	3.17	2.36	5.04	3.26	7.500	.190	6.000	.313	1.52	141.8
8 X 3.94	42.56	17.83	106.65	3.38	2.52	5.98	3.35	8.000	.190	6.000	.313	1.62	140.2
9 X 4.34	45.28	19.67	123.41	3.57	2.73	6.27	3.70	8.500	.220	6.000	.313	1.98	138.7
9 X 4.47	48.19	21.66	139.34	3.77	2.89	6.61	3.81	9.000	.220	6.000	.313	2.09	137.4
10 X 4.80	51.12	22.53	156.37	3.97	3.06	6.94	3.92	9.500	.220	6.000	.313	2.20	136.2
9 X 4.76	46.15	22.36	135.55	3.67	2.94	6.06	4.06	8.500	.220	6.000	.375	1.98	138.7
9 X 4.89	49.12	23.94	152.90	3.88	3.11	6.39	4.17	9.000	.220	6.000	.375	2.09	137.4
10 X 5.02	52.11	25.54	171.41	4.08	3.29	6.71	4.28	9.500	.220	6.000	.375	2.20	136.2
9 X 5.42	47.38	26.77	153.94	3.81	3.25	5.75	4.62	8.500	.220	7.500	.375	1.98	180.4
10 X 5.50	55.23	27.82	194.26	4.26	3.52	6.98	4.68	10.000	.250	6.000	.375	2.63	135.0
9 X 5.65	50.43	28.60	173.39	4.02	3.44	6.06	4.73	9.000	.220	7.500	.375	2.09	178.5
11 X 5.04	58.20	29.25	219.04	4.47	3.70	7.30	4.81	10.500	.250	6.000	.375	2.75	134.0
10 X 5.58	53.49	30.46	194.10	4.23	3.63	6.37	4.84	9.500	.220	7.500	.375	2.20	176.8
11 X 5.79	61.30	31.30	238.26	4.67	3.89	7.61	4.93	11.000	.250	6.000	.375	2.88	132.9

12.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 6.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	56.08	30.95	209.41	4.35	3.73	6.77	5.05	10.000	.250	5.000	.438	2.63	139.0
11 X 6.07	59.17	32.63	232.27	4.56	3.93	7.07	5.17	10.500	.250	5.000	.438	2.75	134.0
10 X 6.16	56.74	32.97	218.94	4.41	3.86	6.64	5.25	10.000	.250	7.500	.375	2.63	175.2
11 X 6.21	62.27	34.74	250.46	4.76	4.12	7.38	5.30	11.000	.250	5.000	.438	2.88	132.9
11 X 6.36	59.86	34.94	242.67	4.62	4.05	6.95	5.37	10.500	.250	7.500	.375	2.75	173.8
11 X 6.49	62.98	36.94	267.76	4.83	4.25	7.29	5.50	11.000	.250	7.500	.375	2.88	172.4
12 X 7.38	69.17	40.47	319.12	5.10	4.01	7.69	6.29	12.000	.313	6.000	.438	3.91	131.0
13 X 7.56	72.39	42.61	345.09	5.29	4.82	8.18	6.45	12.500	.313	6.000	.438	4.07	130.1
12 X 7.62	69.99	42.85	332.21	5.16	4.75	7.75	6.49	12.000	.313	7.500	.375	3.91	169.9
13 X 7.80	73.25	45.08	362.77	5.30	4.95	8.05	6.65	12.500	.313	7.500	.375	4.07	168.8
13 X 7.98	73.37	46.31	369.07	5.37	5.03	7.97	6.80	12.500	.313	6.000	.500	4.07	130.1
13 X 7.99	76.52	47.34	394.66	5.55	5.16	8.34	6.81	13.000	.313	7.500	.375	4.23	167.7
13 X 8.16	78.07	48.04	401.75	5.57	5.24	8.20	6.95	13.000	.313	8.000	.500	4.23	129.2
14 X 8.17	79.82	49.04	428.49	5.75	5.37	8.63	6.96	13.500	.313	7.500	.375	4.38	166.7
14 X 8.35	79.99	51.00	430.99	5.77	5.45	8.55	7.11	13.500	.313	8.000	.500	4.38	128.4
12 X 8.41	71.04	49.79	367.16	5.28	5.13	7.37	7.16	12.000	.313	8.000	.438	3.91	183.2
13 X 8.59	74.99	52.51	400.59	5.48	5.34	7.86	7.32	12.500	.313	8.000	.438	4.07	182.0
13 X 8.78	78.36	54.86	435.63	5.69	5.56	7.94	7.48	13.000	.313	8.000	.438	4.23	180.8
14 X 8.96	81.79	57.45	472.32	5.89	5.78	8.22	7.63	13.500	.313	8.000	.438	4.38	179.7
12 X 8.97	72.49	54.55	389.68	5.34	5.37	7.13	7.64	12.000	.313	8.000	.500	3.91	183.2
13 X 9.15	75.89	57.28	424.34	5.55	5.59	7.41	7.80	12.500	.313	8.000	.500	4.07	182.0
13 X 9.34	79.32	60.03	461.30	5.75	5.82	7.68	7.95	13.000	.313	8.000	.500	4.23	180.8
14 X 9.52	82.77	62.81	499.98	5.95	6.04	7.96	8.11	13.500	.313	8.000	.500	4.38	179.7

12.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 7.50 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.36	.53	.92	.34	.39	1.74	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	3.83	.73	1.61	.45	.42	2.21	.49	2.000	.125	2.000	.125	.33	49.3
3 X .50	3.00	.95	2.54	.56	.45	2.67	.55	2.500	.125	2.000	.125	.39	47.3
3 X .72	7.01	1.19	3.73	.68	.49	3.13	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	6.25	1.12	2.96	.60	.47	2.05	.62	2.500	.125	2.500	.125	.39	61.7
3 X .80	8.40	1.39	4.32	.73	.51	3.11	.66	3.000	.125	2.500	.125	.45	59.5
4 X .67	10.75	1.58	5.99	.85	.56	3.57	.74	3.500	.125	2.500	.125	.52	57.9
4 X .94	13.24	1.99	8.80	.98	.60	4.02	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	15.80	2.32	10.37	1.11	.65	4.47	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	18.58	2.67	13.12	1.25	.71	4.92	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	15.37	2.05	10.44	1.11	.58	3.95	.97	4.000	.125	3.000	.160	.58	70.1
5 X 1.16	21.37	3.04	16.28	1.33	.76	5.36	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	18.19	3.00	13.41	1.25	.74	4.39	1.03	4.500	.125	3.000	.160	.64	68.7
5 X 1.28	21.09	3.48	16.82	1.40	.80	4.83	1.09	5.000	.125	3.000	.160	.70	67.5
5 X 1.35	24.04	3.93	20.70	1.55	.86	5.26	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.60	18.71	4.26	15.86	1.34	.65	3.78	1.36	4.000	.125	4.000	.220	.58	98.7
5 X 1.67	21.82	4.80	20.10	1.50	.92	4.20	1.42	4.500	.125	4.000	.220	.64	96.4
6 X 1.67	27.37	4.79	27.01	1.74	.99	5.04	1.43	6.000	.160	3.000	.160	1.06	65.5
5 X 1.74	24.99	5.42	25.05	1.67	1.00	4.02	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	30.41	5.34	32.37	1.90	1.06	6.06	1.51	6.500	.160	3.000	.160	1.14	64.6
6 X 1.82	28.19	6.66	30.53	1.84	1.08	5.64	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	33.47	5.92	38.35	2.05	1.15	6.48	1.59	7.000	.160	3.000	.160	1.22	63.8
6 X 1.88	29.53	5.85	32.36	1.89	1.10	5.53	1.61	6.000	.160	3.500	.190	1.06	78.4
7 X 1.98	32.67	6.49	38.58	2.05	1.18	5.94	1.69	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	35.82	7.15	45.45	2.21	1.27	6.36	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	31.40	7.08	38.29	2.03	1.22	5.41	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	34.69	7.82	45.46	2.20	1.31	5.81	1.93	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	37.93	8.58	53.35	2.37	1.41	6.22	1.98	7.000	.160	4.000	.220	1.22	89.3
6 X 2.56	33.89	9.21	47.97	2.23	1.42	5.21	2.18	6.000	.160	5.000	.250	1.06	119.0
7 X 2.69	37.24	10.12	56.70	2.41	1.52	5.80	2.28	6.500	.160	5.000	.250	1.14	117.3
7 X 2.75	40.61	11.05	66.26	2.59	1.63	5.99	2.34	7.000	.160	5.000	.250	1.22	115.8
8 X 3.10	43.94	12.48	78.95	2.79	1.80	6.33	2.64	7.500	.190	5.000	.250	1.54	114.5
8 X 3.21	47.50	13.52	90.67	2.98	1.92	6.71	2.74	8.000	.190	5.000	.250	1.64	113.3
6 X 3.28	36.40	12.72	62.44	2.46	1.72	4.91	2.80	6.000	.160	6.000	.313	1.06	148.0
7 X 3.38	39.90	13.92	78.54	2.66	1.84	5.28	2.86	6.500	.160	6.000	.313	1.14	145.6
7 X 3.47	43.46	15.15	85.04	2.86	1.97	5.65	2.96	7.000	.160	6.000	.313	1.22	143.5
8 X 3.82	46.66	16.03	100.82	3.06	2.15	5.98	3.26	7.500	.190	6.000	.313	1.54	141.8
8 X 3.94	50.37	18.16	115.14	3.26	2.29	6.34	3.35	8.000	.190	6.000	.313	1.64	140.2
9 X 4.34	53.60	20.66	133.39	3.45	2.48	6.65	3.70	8.500	.220	6.000	.313	2.01	138.7
9 X 4.47	57.39	21.51	150.58	3.65	2.62	7.00	3.81	9.000	.220	6.000	.313	2.12	137.4
10 X 4.60	60.92	22.90	168.94	3.85	2.77	7.35	3.92	9.500	.220	6.000	.313	2.23	136.2
9 X 4.75	55.37	22.81	147.18	3.57	2.67	6.45	4.00	8.500	.220	6.000	.375	2.01	138.7
9 X 4.89	58.67	24.42	165.96	3.77	2.83	6.80	4.17	9.000	.220	6.000	.375	2.12	137.4
10 X 5.02	62.27	26.06	185.99	3.97	2.99	7.14	4.26	9.500	.220	6.000	.375	2.23	136.2
9 X 5.42	56.77	27.30	168.23	3.73	2.96	6.16	4.62	8.500	.220	7.500	.375	2.01	180.4
10 X 5.90	65.92	28.42	211.01	4.15	3.20	7.42	4.08	10.000	.250	6.000	.375	2.60	135.0
9 X 5.55	60.45	29.17	189.39	3.94	3.13	6.49	4.73	9.000	.220	7.500	.375	2.12	178.5
11 X 5.04	69.55	30.19	234.18	4.36	3.37	7.76	4.81	10.500	.250	6.000	.375	2.78	134.0
10 X 5.88	64.14	31.07	211.93	4.14	3.30	6.82	4.84	9.500	.220	7.500	.375	2.23	176.8
11 X 5.79	73.23	31.96	258.72	4.56	3.53	8.09	4.93	11.000	.250	6.000	.375	2.91	132.9

12.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 7.50 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 9.92	67.67	31.02	228.32	4.27	3.40	7.22	5.85	10.000	.250	5.000	.438	2.66	135.0
11 X 8.87	70.77	33.55	253.16	4.47	3.58	7.55	5.17	10.300	.250	5.000	.438	2.78	134.0
10 X 8.16	67.93	33.67	239.17	4.33	3.52	7.10	5.25	10.000	.250	7.500	.375	2.66	175.2
11 X 8.21	74.48	35.50	279.48	4.67	3.75	7.87	5.30	11.000	.250	6.000	.438	2.91	132.9
11 X 8.30	71.05	35.08	265.01	4.54	3.70	7.43	5.37	10.500	.250	7.500	.375	2.78	173.8
11 X 8.45	75.39	37.73	292.32	4.74	3.86	7.75	5.50	11.000	.250	7.500	.375	2.91	172.4
12 X 7.38	82.35	41.47	348.22	5.03	4.23	8.40	6.29	12.000	.313	6.000	.438	3.95	131.0
13 X 7.26	86.16	43.68	386.43	5.22	4.42	8.71	6.45	12.500	.313	6.000	.438	4.11	130.1
12 X 7.62	83.38	43.90	363.05	5.09	4.35	8.27	6.49	12.000	.313	7.500	.375	3.95	169.9
13 X 7.50	87.22	46.19	396.37	5.29	4.54	8.58	6.65	12.500	.313	7.500	.375	4.11	168.8
13 X 7.36	87.41	47.47	403.77	5.31	4.62	8.51	6.80	12.500	.313	6.000	.500	4.11	130.1
13 X 7.99	91.08	48.52	431.35	5.49	4.74	8.69	6.81	13.000	.313	7.500	.375	4.26	167.7
13 X 8.16	91.36	49.87	439.41	5.51	4.81	8.61	6.95	13.000	.313	8.000	.500	4.26	129.2
14 X 8.17	94.90	50.89	468.01	5.69	4.93	9.20	6.96	13.500	.313	7.500	.375	4.42	166.7
14 X 8.35	95.20	52.29	470.77	5.71	5.01	9.12	7.11	13.500	.313	8.000	.500	4.42	128.4
12 X 8.41	85.47	51.01	403.29	5.24	4.72	7.91	7.16	12.000	.313	8.000	.438	3.95	183.2
13 X 8.59	89.42	53.00	439.84	5.45	4.92	8.21	7.32	12.500	.313	8.000	.438	4.11	182.0
13 X 8.76	93.39	54.22	478.17	5.65	5.12	8.30	7.46	13.000	.313	8.000	.438	4.26	180.8
14 X 8.96	97.36	56.38	516.29	5.85	5.32	8.80	7.63	13.500	.313	8.000	.438	4.42	179.7
12 X 9.47	86.57	55.89	428.80	5.32	4.95	7.87	7.54	12.000	.313	8.000	.500	3.95	183.2
13 X 9.15	90.58	58.59	467.40	5.53	5.16	7.96	7.88	12.500	.313	8.000	.500	4.11	182.0
13 X 9.34	94.62	61.52	507.96	5.73	5.37	8.20	7.95	13.000	.313	8.000	.500	4.26	180.8
14 X 9.52	98.67	64.39	550.35	5.94	5.58	8.55	8.11	13.500	.313	8.000	.500	4.42	179.7

12.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA= 9.00 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.26	.55	1.00	.33	.44	1.81	.43	1.500	.125	2.000	.125	.28	53.2
2 X .58	3.09	.76	1.73	.43	.47	2.28	.49	2.000	.125	2.000	.125	.34	49.3
3 X .65	5.43	.98	2.70	.53	.50	2.75	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	7.46	1.22	3.94	.64	.53	3.22	.62	3.000	.125	2.000	.125	.47	45.8
3 X .72	6.12	1.15	3.15	.57	.51	2.74	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	8.31	1.43	4.50	.69	.55	3.20	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	10.74	1.72	6.30	.80	.59	3.66	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	13.38	2.03	8.39	.92	.63	4.12	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	16.19	2.37	10.84	1.05	.67	4.58	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	19.16	2.72	13.70	1.17	.72	5.03	.93	5.000	.125	2.500	.125	.72	54.8
4 X 1.13	15.84	2.70	10.97	1.05	.69	4.06	.97	4.000	.125	3.000	.160	.59	70.1
5 X 1.16	22.25	3.09	16.97	1.30	.76	5.49	.99	5.500	.125	2.500	.125	.78	53.7
5 X 1.21	18.92	3.12	14.05	1.18	.74	4.51	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	22.13	3.65	17.59	1.32	.79	4.96	1.09	5.000	.125	3.000	.160	.72	67.5
5 X 1.35	25.44	4.30	21.61	1.46	.85	5.40	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.60	19.91	4.28	16.75	1.27	.84	3.91	1.30	4.000	.125	4.000	.220	.59	98.7
5 X 1.67	25.42	4.89	21.24	1.43	.91	4.34	1.42	4.500	.125	4.000	.220	.66	96.4
5 X 1.67	24.40	4.88	20.25	1.35	.96	5.79	1.43	6.000	.160	3.000	.160	1.08	65.5
5 X 1.74	27.01	5.51	26.33	1.58	.97	4.78	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	32.89	5.44	38.83	1.79	1.03	6.22	1.51	6.500	.160	3.000	.160	1.16	64.0
5 X 1.82	30.56	6.16	32.05	1.74	1.05	5.20	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.86	36.43	6.62	40.03	1.94	1.10	6.69	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	32.09	5.96	33.92	1.79	1.06	5.69	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.98	35.71	6.60	40.39	1.94	1.13	6.12	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	39.37	7.27	47.36	2.10	1.21	6.54	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	34.55	7.20	40.24	1.93	1.16	5.59	1.82	6.000	.160	4.000	.220	1.08	91.8
7 X 2.22	38.29	7.95	47.72	2.09	1.25	6.00	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	42.86	8.72	55.97	2.20	1.33	6.42	1.98	7.000	.160	4.000	.220	1.24	89.3
6 X 2.56	37.73	9.36	50.03	2.13	1.34	5.41	2.18	6.000	.160	5.000	.250	1.08	119.0
7 X 2.65	41.63	10.28	59.79	2.30	1.44	5.81	2.26	6.500	.160	5.000	.250	1.16	117.3
7 X 2.75	45.56	11.23	69.82	2.48	1.53	6.22	2.34	7.000	.160	5.000	.250	1.24	115.8
8 X 3.10	49.52	12.66	83.29	2.67	1.68	6.57	2.54	7.500	.190	5.000	.250	1.57	114.5
8 X 3.21	53.46	13.74	95.62	2.85	1.79	6.96	2.74	8.000	.190	5.000	.250	1.66	113.3
6 X 3.28	41.14	12.93	80.40	2.37	1.01	5.14	2.80	6.000	.160	6.000	.313	1.08	148.0
7 X 3.38	45.23	14.15	78.13	2.56	1.73	5.52	2.88	6.500	.160	6.000	.313	1.16	145.6
7 X 3.47	49.33	15.39	90.90	2.70	1.84	5.91	2.96	7.000	.160	6.000	.313	1.24	143.5
8 X 3.62	53.40	17.10	106.87	2.95	2.00	6.25	3.26	7.500	.190	6.000	.313	1.57	141.8
8 X 3.84	57.51	18.45	122.23	3.15	2.13	6.62	3.35	8.000	.190	6.000	.313	1.66	140.2
9 X 4.34	61.59	20.40	141.74	3.34	2.30	6.95	3.70	8.500	.220	6.000	.313	2.04	138.7
9 X 4.47	65.72	21.80	159.95	3.53	2.43	7.32	3.81	9.000	.220	6.000	.313	2.15	137.4
10 X 4.60	69.86	23.36	179.43	3.73	2.57	7.68	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	63.21	23.19	156.93	3.47	2.48	6.77	4.06	8.500	.220	6.000	.375	2.04	135.7
9 X 4.89	67.42	24.82	176.89	3.67	2.62	7.13	4.17	9.000	.220	6.000	.375	2.15	134.4
10 X 5.02	71.63	26.46	198.19	3.86	2.77	7.48	4.28	9.500	.220	6.000	.375	2.26	133.2
9 X 5.42	65.44	27.76	180.27	3.64	2.75	6.50	4.62	8.500	.220	7.500	.375	2.04	180.4
10 X 5.60	73.64	28.92	225.06	4.06	2.97	7.78	4.68	10.000	.250	6.000	.375	2.69	135.0
9 X 5.55	69.75	29.05	202.86	3.84	2.91	6.84	4.73	9.000	.220	7.500	.375	2.15	178.5
11 X 5.84	80.08	30.71	249.73	4.25	3.12	8.13	4.81	10.500	.250	6.000	.375	2.81	134.0
10 X 5.88	74.06	31.58	226.91	4.05	3.06	7.19	4.84	9.500	.220	7.500	.375	2.26	176.8
11 X 5.79	84.32	32.54	279.85	4.45	3.27	8.48	4.93	11.000	.250	6.000	.375	2.94	132.9

12.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA= 9.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	77.34	32.17	244.24	4.17	3.16	7.59	5.05	10.000	.250	5.000	.438	2.69	135.0
11 X 6.07	81.65	34.13	270.78	4.37	3.32	7.93	5.17	10.500	.250	6.000	.438	2.81	134.0
10 X 6.16	78.40	34.25	256.22	4.24	3.27	7.48	5.25	10.000	.250	7.500	.375	2.69	175.2
11 X 6.21	85.96	36.12	290.84	4.57	3.48	8.27	5.30	11.000	.250	5.000	.438	2.94	132.9
11 X 6.30	82.75	36.38	283.83	4.44	3.43	7.82	5.37	10.500	.250	7.500	.375	2.81	173.8
11 X 6.49	87.10	38.36	313.02	4.65	3.59	8.16	5.50	11.000	.250	7.500	.375	2.94	172.4
12 X 7.36	94.87	42.29	372.95	4.94	3.93	8.62	6.29	12.000	.313	6.000	.438	3.99	131.0
13 X 7.56	99.26	44.55	407.41	5.14	4.10	9.15	6.45	12.500	.313	6.000	.438	4.15	130.1
12 X 7.62	98.11	44.75	389.36	5.01	4.05	8.78	6.49	12.000	.313	7.500	.375	3.99	169.9
13 X 7.80	100.55	47.10	424.97	5.21	4.23	9.02	6.65	12.500	.313	7.500	.375	4.15	168.8
13 X 7.98	100.81	48.41	433.34	5.24	4.30	8.95	6.80	12.500	.313	8.000	.500	4.15	130.1
13 X 7.99	103.00	49.48	462.42	5.41	4.48	9.35	6.81	13.000	.313	7.500	.375	4.30	167.7
13 X 8.16	105.29	50.86	471.53	5.44	4.48	9.27	6.95	13.000	.313	8.000	.500	4.30	129.2
14 X 8.17	109.46	51.90	501.68	5.61	4.58	9.67	6.96	13.500	.313	7.500	.375	4.46	166.7
14 X 8.35	109.79	53.54	511.56	5.63	4.66	9.59	7.11	13.500	.313	8.000	.500	4.46	128.4
12 X 8.41	96.72	51.39	434.21	5.18	4.40	8.35	7.16	12.000	.313	8.000	.438	3.99	163.2
13 X 8.59	103.27	54.64	473.46	5.39	4.58	8.67	7.32	12.500	.313	8.000	.438	4.15	162.0
13 X 8.78	107.84	57.32	514.66	5.59	4.77	8.98	7.48	13.000	.313	8.000	.438	4.30	160.8
14 X 8.96	112.42	60.03	557.07	5.79	4.96	9.29	7.63	13.500	.313	8.000	.438	4.46	179.7
12 X 8.97	100.10	56.98	462.95	5.27	4.62	8.13	7.64	12.000	.313	8.000	.500	3.99	163.2
13 X 9.15	104.72	59.83	504.53	5.48	4.82	8.43	7.80	12.500	.313	8.000	.500	4.15	162.0
13 X 9.34	109.36	62.73	548.11	5.69	5.01	8.74	7.95	13.000	.313	8.000	.500	4.30	160.8
14 X 9.52	114.02	65.65	593.69	5.89	5.21	9.04	8.11	13.500	.313	8.000	.500	4.46	179.7

12.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=10.50 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.17	.58	1.08	.31	.50	1.88	.43	1.500	.125	2.000	.125	.30	53.2
2 X .58	3.54	.78	1.85	.41	.52	2.35	.49	2.000	.125	2.000	.125	.36	49.3
3 X .65	5.23	1.01	2.86	.51	.55	2.83	.55	2.500	.125	2.000	.125	.42	47.3
3 X .72	7.23	1.26	4.15	.61	.57	3.30	.62	3.000	.125	2.000	.125	.48	45.8
3 X .72	5.94	1.19	3.33	.55	.56	2.81	.62	2.500	.125	2.500	.125	.42	61.7
3 X .80	8.11	1.46	4.80	.60	.59	3.28	.68	3.000	.125	2.500	.125	.48	59.5
4 X .87	10.56	1.76	6.60	.77	.63	3.75	.74	3.500	.125	2.500	.125	.55	57.9
4 X .94	13.26	2.08	8.76	.88	.66	4.21	.80	4.000	.125	2.500	.125	.61	56.6
5 X 1.02	16.18	2.42	11.30	1.00	.70	4.68	.87	4.500	.125	2.500	.125	.67	55.6
5 X 1.09	19.30	2.77	14.24	1.12	.74	5.14	.93	5.000	.125	2.500	.125	.73	54.8
4 X 1.13	15.95	2.76	11.47	1.00	.72	4.16	.97	4.000	.125	3.000	.160	.61	70.1
5 X 1.16	22.56	3.15	17.02	1.24	.78	5.59	.99	5.500	.125	2.500	.125	.80	53.7
5 X 1.21	19.21	3.18	14.85	1.13	.76	4.61	1.03	4.500	.125	3.000	.160	.67	68.7
5 X 1.28	22.03	3.81	18.30	1.26	.81	5.07	1.09	5.000	.125	3.000	.160	.73	67.5
5 X 1.35	26.20	4.47	22.45	1.39	.86	5.52	1.15	5.500	.125	3.000	.160	.80	66.5
4 X 1.60	26.03	4.37	17.57	1.22	.85	4.02	1.36	4.000	.125	4.000	.220	.61	98.7
5 X 1.67	24.43	4.98	22.22	1.37	.91	4.47	1.42	4.500	.125	4.000	.220	.67	96.4
5 X 1.67	30.70	4.96	29.37	1.57	.96	5.92	1.43	6.000	.160	3.000	.160	1.10	65.5
5 X 1.74	28.35	5.51	27.50	1.51	.97	4.91	1.48	5.000	.125	4.000	.220	.73	94.5
7 X 1.77	34.59	5.53	35.14	1.71	1.02	6.36	1.51	6.500	.160	3.000	.160	1.18	64.6
5 X 1.82	32.37	6.25	33.41	1.67	1.03	5.34	1.55	5.500	.125	4.000	.220	.80	93.0
7 X 1.86	36.49	6.12	41.50	1.89	1.08	6.80	1.59	7.000	.160	3.000	.160	1.26	63.8
6 X 1.88	33.00	6.06	35.32	1.71	1.04	5.83	1.61	6.000	.160	3.500	.190	1.10	78.4
7 X 1.96	37.89	6.71	42.02	1.80	1.11	6.27	1.69	6.500	.160	3.500	.190	1.18	77.4
7 X 2.07	41.98	7.38	49.44	2.01	1.18	6.70	1.77	7.000	.160	3.500	.190	1.26	76.4
6 X 2.13	38.01	7.32	41.97	1.85	1.14	5.73	1.82	6.000	.160	4.000	.220	1.10	91.6
7 X 2.22	41.81	8.07	49.74	2.00	1.21	6.16	1.90	6.500	.160	4.000	.220	1.18	90.4
7 X 2.32	45.25	8.85	58.28	2.10	1.29	6.59	1.98	7.000	.160	4.000	.220	1.26	89.3
6 X 2.50	40.74	9.51	53.00	2.04	1.30	5.57	2.18	6.000	.160	5.000	.250	1.10	119.0
7 X 2.65	45.15	10.44	62.52	2.21	1.38	5.99	2.26	6.500	.160	5.000	.250	1.18	117.3
7 X 2.75	49.59	11.39	72.94	2.38	1.47	6.40	2.34	7.000	.160	5.000	.250	1.26	115.8
8 X 3.10	54.17	12.07	87.09	2.57	1.51	6.77	2.54	7.500	.190	5.000	.250	1.59	114.5
8 X 3.21	58.06	13.93	99.93	2.75	1.70	7.17	2.74	8.000	.190	5.000	.250	1.69	113.3
6 X 3.28	45.10	13.13	89.89	2.29	1.55	5.33	2.80	6.000	.160	6.000	.313	1.10	148.0
7 X 3.38	49.74	14.35	82.15	2.48	1.65	5.72	2.86	6.500	.160	6.000	.313	1.18	145.6
7 X 3.47	54.41	15.60	95.49	2.66	1.76	6.12	2.96	7.000	.160	6.000	.313	1.26	143.5
8 X 3.82	59.06	17.35	112.32	2.86	1.90	6.47	3.26	7.500	.190	6.000	.313	1.59	141.8
8 X 3.94	63.76	18.71	128.39	3.04	2.01	6.86	3.35	8.000	.190	6.000	.313	1.69	140.2
9 X 4.34	68.40	20.70	146.98	3.24	2.18	7.20	3.70	8.500	.220	6.000	.313	2.06	138.7
9 X 4.47	73.16	22.18	168.07	3.43	2.30	7.58	3.81	9.000	.220	6.000	.313	2.17	137.4
10 X 4.50	77.91	23.69	188.46	3.62	2.42	7.90	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	78.53	23.53	189.40	3.37	2.35	7.03	4.06	8.500	.220	6.000	.375	2.06	138.7
9 X 4.89	75.34	25.18	188.36	3.56	2.47	7.40	4.17	9.000	.220	6.000	.375	2.17	137.4
10 X 5.02	80.19	25.80	208.73	3.76	2.60	7.77	4.28	9.500	.220	6.000	.375	2.26	136.2
9 X 5.42	73.37	26.16	196.75	3.59	2.60	6.78	4.62	8.500	.220	7.500	.375	2.06	180.4
10 X 5.50	84.94	29.35	237.22	3.95	2.79	8.08	4.68	10.000	.250	6.000	.375	2.72	135.0
9 X 5.55	78.29	30.07	214.55	3.75	2.74	7.13	4.73	9.000	.220	7.500	.375	2.17	178.5
11 X 5.64	89.78	31.17	263.17	4.15	2.93	8.44	4.81	10.500	.250	6.000	.375	2.84	134.0
10 X 5.68	83.22	32.62	239.69	3.95	2.88	7.49	4.84	9.500	.220	7.500	.375	2.26	176.8
11 X 5.79	94.02	33.62	290.66	4.34	3.07	8.80	4.93	11.000	.250	6.000	.375	2.97	132.9

12.J IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=10.5J SQ. IN.)

NOM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.32	86.63	32.05	258.05	4.07	2.97	7.90	5.05	10.000	.250	5.000	.438	2.72	135.0
11 X 6.07	91.75	34.04	286.01	4.27	3.12	8.20	5.17	10.500	.250	5.000	.438	2.84	134.0
10 X 6.16	88.13	34.75	271.03	4.15	3.08	7.80	5.25	10.000	.250	7.500	.375	2.72	175.2
11 X 6.21	96.07	36.05	312.06	4.47	3.26	8.61	5.30	11.000	.250	5.000	.438	2.97	132.9
11 X 6.36	93.09	36.83	300.15	4.35	3.22	8.15	5.37	10.500	.250	7.500	.375	2.84	173.6
11 X 6.45	96.05	38.94	330.94	4.55	3.38	8.58	5.50	11.000	.250	7.500	.375	2.97	172.4
12 X 7.38	100.06	42.99	394.49	4.85	3.70	9.18	6.29	12.000	.313	6.000	.438	4.03	131.0
13 X 7.56	111.04	45.28	453.89	5.04	3.86	9.52	5.45	12.500	.313	6.000	.438	4.19	130.1
12 X 7.62	108.14	45.48	412.18	4.93	3.81	9.06	6.49	12.000	.313	7.500	.375	4.03	169.9
13 X 7.86	113.17	47.86	449.98	5.12	3.98	9.40	6.65	12.500	.313	7.500	.375	4.19	168.8
13 X 7.96	113.92	49.21	459.14	5.15	4.04	9.33	5.80	12.500	.313	6.000	.500	4.19	130.1
13 X 7.99	113.21	50.29	489.50	5.32	4.14	9.73	6.81	13.000	.313	7.500	.375	4.34	167.7
13 X 8.16	116.00	51.70	499.55	5.35	4.21	9.00	6.95	13.000	.313	6.000	.500	4.34	129.2
14 X 8.17	123.20	52.75	531.02	5.51	4.31	10.07	6.96	13.500	.313	7.500	.375	4.50	166.7
14 X 8.35	123.08	54.23	541.90	5.55	4.38	9.99	7.11	13.500	.313	6.000	.500	4.50	128.4
12 X 8.41	111.32	52.83	461.28	5.11	4.14	8.73	7.10	12.000	.313	8.000	.438	4.03	183.2
13 X 8.59	118.47	55.52	502.87	5.31	4.32	9.06	7.32	12.500	.313	8.000	.438	4.19	182.0
13 X 8.78	121.64	58.25	546.48	5.51	4.49	9.38	7.48	13.000	.313	8.000	.438	4.34	180.8
14 X 8.96	126.82	61.01	592.14	5.71	4.67	9.71	7.63	13.500	.313	8.000	.438	4.50	179.7
12 X 8.97	113.02	57.90	492.93	5.21	4.36	8.51	7.64	12.000	.313	8.000	.500	4.03	183.2
13 X 9.15	116.25	60.80	537.08	5.42	4.54	8.83	7.80	12.500	.313	8.000	.500	4.19	182.0
13 X 9.34	123.50	63.74	583.34	5.62	4.72	9.15	7.95	13.000	.313	8.000	.500	4.34	180.8
14 X 9.52	120.70	66.72	631.73	5.83	4.91	9.47	8.11	13.500	.313	8.000	.500	4.50	179.7

12.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=12.00 SQ. IN.)

NUM. J	X	LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.50	2.11	.60	1.17	.31	.56	1.94	.43	1.500	.125	2.000	.125	.31	53.2
2	X	.58	3.42	.81	1.97	.40	.68	2.42	.49	2.000	.125	2.000	.125	.38	49.3
3	X	.65	5.05	1.04	3.02	.49	.80	2.90	.55	2.500	.125	2.000	.125	.44	47.3
3	X	.72	6.99	1.29	4.36	.59	.82	3.38	.62	3.000	.125	2.000	.125	.50	45.8
3	X	.72	5.75	1.22	3.52	.53	.81	2.89	.62	2.500	.125	2.500	.125	.44	61.7
3	X	.80	7.88	1.50	5.04	.63	.84	3.36	.68	3.000	.125	2.500	.125	.50	59.5
4	X	.87	10.31	1.80	6.90	.74	.87	3.83	.74	3.500	.125	2.500	.125	.56	57.9
4	X	.94	13.02	2.12	9.12	.84	.70	4.30	.80	4.000	.125	2.500	.125	.63	56.6
5	X	1.02	15.98	2.46	11.73	.96	.73	4.77	.87	4.500	.125	2.500	.125	.69	55.6
5	X	1.09	19.17	2.82	14.76	1.07	.77	5.23	.93	5.000	.125	2.500	.125	.75	54.6
4	X	1.13	19.66	2.81	11.95	.95	.75	4.25	.97	4.000	.125	3.000	.160	.63	70.1
6	X	1.16	22.57	3.20	18.23	1.18	.81	5.69	.99	5.500	.125	2.500	.125	.81	53.7
5	X	1.21	19.21	3.23	15.22	1.08	.79	4.71	1.03	4.500	.125	3.000	.160	.69	68.7
5	X	1.28	22.75	3.67	18.98	1.20	.83	5.17	1.09	5.000	.125	3.000	.160	.75	67.5
6	X	1.35	26.50	4.13	23.25	1.35	.88	5.62	1.15	5.500	.125	3.000	.160	.81	66.5
4	X	1.50	21.00	4.45	16.35	1.17	.87	4.13	1.36	4.000	.125	4.000	.220	.63	98.7
5	X	1.67	25.00	5.06	23.15	1.31	.93	4.97	1.42	4.500	.125	4.000	.220	.69	96.4
6	X	1.67	31.44	5.84	30.43	1.51	.97	6.03	1.43	6.000	.160	3.000	.160	1.12	65.5
5	X	1.74	29.17	5.69	26.59	1.40	.98	5.02	1.48	5.000	.125	4.000	.220	.75	94.5
7	X	1.77	33.56	5.01	36.37	1.64	1.02	6.48	1.51	6.500	.160	3.000	.160	1.20	64.6
6	X	1.82	33.48	6.35	34.68	1.60	1.04	5.46	1.55	6.000	.125	4.000	.220	.81	93.0
7	X	1.86	39.84	6.21	42.97	1.78	1.08	6.92	1.59	7.000	.160	3.000	.160	1.28	63.8
6	X	1.98	35.00	6.15	36.02	1.64	1.05	5.95	1.61	6.000	.160	3.500	.190	1.12	78.4
7	X	1.98	39.37	6.81	43.56	1.78	1.11	6.39	1.69	6.500	.160	3.500	.190	1.20	77.4
7	X	2.07	43.83	7.49	51.17	1.93	1.17	6.83	1.77	7.000	.160	3.500	.190	1.28	76.4
6	X	2.13	36.41	7.43	43.58	1.78	1.13	5.87	1.82	6.000	.160	4.000	.220	1.12	91.6
7	X	2.22	42.98	8.19	51.59	1.93	1.20	6.30	1.90	6.500	.160	4.000	.220	1.20	90.4
7	X	2.32	47.04	8.97	61.40	2.08	1.27	6.73	1.98	7.000	.160	4.000	.220	1.28	89.3
6	X	2.50	43.04	9.65	59.16	1.97	1.28	5.72	2.18	6.000	.160	5.000	.250	1.12	119.0
7	X	2.65	47.38	10.58	65.60	2.13	1.36	6.14	2.26	6.500	.160	5.000	.250	1.20	117.3
7	X	2.75	52.79	11.94	75.77	2.30	1.44	6.56	2.34	7.000	.160	5.000	.250	1.28	115.8
8	X	3.10	57.97	13.04	90.51	2.49	1.56	6.94	2.64	7.500	.190	5.000	.250	1.62	114.5
8	X	3.21	62.96	14.12	103.61	2.65	1.65	7.35	2.74	8.000	.190	5.000	.250	1.71	113.3
6	X	3.28	48.35	13.31	73.07	2.22	1.51	5.49	2.80	6.000	.160	5.000	.313	1.12	146.0
7	X	3.38	53.49	14.55	85.78	2.40	1.60	5.90	2.88	6.500	.160	6.000	.313	1.20	145.6
7	X	3.47	58.66	15.81	99.62	2.58	1.70	6.30	2.96	7.000	.160	6.000	.313	1.28	143.5
8	X	3.62	63.94	17.58	117.21	2.77	1.83	6.67	3.20	7.500	.190	6.000	.313	1.62	141.6
8	X	3.94	69.19	18.95	133.89	2.95	1.94	7.06	3.35	8.000	.190	6.000	.313	1.71	140.2
9	X	4.34	74.49	20.97	155.45	3.15	2.09	7.41	3.70	8.500	.220	6.000	.313	2.09	138.7
9	X	4.47	79.77	22.47	175.30	3.33	2.20	7.80	3.81	9.000	.220	6.000	.313	2.20	137.4
10	X	4.60	85.07	24.00	196.52	3.51	2.31	8.19	3.92	9.500	.220	6.000	.313	2.31	136.2
9	X	4.70	77.04	23.84	172.99	3.28	2.24	7.26	4.06	8.500	.220	6.000	.375	2.09	138.7
9	X	4.89	82.43	25.51	194.76	3.47	2.36	7.64	4.17	9.000	.220	6.000	.375	2.20	137.4
10	X	5.02	87.82	27.20	218.38	3.66	2.48	8.02	4.28	9.500	.220	6.000	.375	2.31	136.2
9	X	5.42	86.54	28.52	208.10	3.47	2.48	7.02	4.62	8.500	.220	7.500	.375	2.09	180.4
10	X	5.50	93.22	29.74	248.02	3.86	2.66	8.34	4.68	10.000	.250	6.000	.375	2.75	135.0
9	X	5.55	86.36	30.46	224.95	3.67	2.61	7.39	4.73	9.000	.220	7.500	.375	2.20	176.5
11	X	5.84	98.04	31.58	275.09	4.05	2.79	8.71	4.81	10.500	.250	6.000	.375	2.88	134.0
10	X	5.88	91.59	32.42	251.41	3.86	2.74	7.76	4.84	9.500	.220	7.500	.375	2.31	176.8
11	X	5.79	104.07	33.45	303.76	4.24	2.92	9.08	4.93	11.000	.250	6.000	.375	3.00	132.9

12.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=12.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	9[illegible]	33.08	270.32	3.98	2.83	8.17	[illegible]	10.000	.250	5.000	.438	2.75	135.0
11 X 6.07	101.05	35.09	299.53	4.18	2.96	8.54	5.17	10.500	.250	5.000	.438	2.86	134.0
10 X 6.16	97.09	35.20	284.18	4.06	2.93	8.07	5.25	10.000	.250	7.500	.375	2.75	175.2
11 X 6.21	100.26	37.13	330.43	4.37	3.10	8.90	5.30	11.000	.250	5.000	.438	3.00	132.9
11 X 6.30	102.05	37.30	314.63	4.26	3.07	8.43	5.37	10.500	.250	7.500	.375	2.88	173.8
11 X 6.45	106.24	39.43	340.82	4.45	3.21	8.79	5.50	11.000	.250	7.500	.375	3.00	172.4
12 X 7.36	117.70	43.51	413.64	4.70	3.51	9.49	6.29	12.000	.313	6.000	.438	4.07	131.0
10 X 7.56	123.27	45.93	451.76	4.95	3.66	9.04	6.45	12.500	.313	6.000	.438	4.23	130.1
12 X 7.62	119.43	40.12	432.54	4.84	3.62	9.38	6.49	12.000	.313	7.500	.375	4.07	169.9
13 X 7.80	125.05	40.54	472.06	5.03	3.78	9.72	6.65	12.500	.313	7.500	.375	4.23	168.8
13 X 7.95	125.51	49.91	462.09	5.00	3.84	9.56	6.80	12.500	.313	8.000	.500	4.23	130.1
13 X 7.99	130.07	51.30	513.56	5.23	3.93	10.07	6.81	13.000	.313	7.500	.375	4.38	167.7
13 X 8.16	131.17	52.44	524.40	5.20	4.00	10.00	6.95	13.000	.313	8.000	.500	4.38	129.2
14 X 8.17	136.32	53.50	557.07	5.42	4.09	10.41	6.96	13.500	.313	7.500	.375	4.54	166.7
14 X 8.35	136.85	55.00	566.87	5.46	4.16	10.34	7.11	13.500	.313	8.000	.500	4.54	128.4
12 X 8.41	128.23	53.97	485.41	5.03	3.94	9.06	7.16	12.000	.313	8.000	.438	4.07	183.2
13 X 8.59	126.99	56.50	529.08	5.23	4.10	9.46	7.32	12.500	.313	8.000	.438	4.23	182.0
13 X 8.78	134.75	59.06	574.88	5.43	4.27	9.73	7.48	13.000	.313	8.000	.438	4.38	180.8
14 X 8.96	140.56	61.86	622.82	5.63	4.43	10.07	7.63	13.500	.313	8.000	.438	4.54	179.7
12 X 8.97	129.30	58.71	519.71	5.14	4.15	8.85	7.64	12.000	.313	8.000	.500	4.07	183.2
13 X 9.15	131.13	61.65	566.14	5.35	4.32	9.18	7.80	12.500	.313	8.000	.500	4.23	182.0
13 X 9.34	136.99	64.63	614.78	5.55	4.49	9.51	7.95	13.000	.313	8.000	.500	4.38	180.8
14 X 9.52	142.85	67.65	665.66	5.75	4.66	9.84	8.11	13.500	.313	8.000	.500	4.54	179.7

TABLE 5

EFFECTIVE PLATING WIDTH = 14"

7/16" - 1" PLATE THICKNESSES

14.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 6.13 SQ. IN.)

NUM. J X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.03	.49	.80	.35	.31	1.63	.43	1.500	.125	2.000	.125	.24	53.2
2 X .58	4.23	.69	1.45	.47	.34	2.10	.49	2.000	.125	2.000	.125	.30	49.3
3 X .65	6.00	.91	2.32	.59	.38	2.56	.55	2.500	.125	2.000	.125	.37	47.3
3 X .72	8.11	1.14	3.44	.71	.42	3.01	.62	3.000	.125	2.000	.125	.43	45.8
3 X .72	8.56	1.07	2.70	.63	.40	2.53	.62	2.500	.125	2.500	.125	.37	61.7
3 X .80	8.81	1.33	3.98	.76	.45	2.99	.68	3.000	.125	2.500	.125	.43	59.5
4 X .87	11.06	1.62	5.56	.90	.50	3.43	.74	3.500	.125	2.500	.125	.49	57.9
4 X .94	13.39	1.92	7.46	1.04	.56	3.88	.80	4.000	.125	2.500	.125	.55	56.6
5 X 1.02	15.76	2.25	9.71	1.18	.62	4.32	.87	4.500	.125	2.500	.125	.62	55.6
5 X 1.09	18.22	2.59	12.33	1.32	.68	4.76	.93	5.000	.125	2.500	.125	.68	54.6
4 X 1.13	19.10	2.96	9.73	1.17	.84	3.79	.97	4.000	.125	3.000	.100	.55	70.1
6 X 1.16	20.68	2.95	15.34	1.47	.74	5.20	.99	5.500	.125	2.500	.125	.74	53.7
5 X 1.21	17.62	2.97	12.54	1.32	.71	4.23	1.03	4.500	.125	3.000	.100	.62	68.7
5 X 1.28	20.17	3.39	15.76	1.48	.78	4.66	1.09	5.000	.125	3.000	.100	.68	67.5
6 X 1.35	22.74	3.83	19.46	1.64	.86	5.08	1.15	5.500	.125	3.000	.100	.74	66.5
4 X 1.00	17.56	4.07	14.68	1.40	.84	3.60	1.36	4.000	.125	4.000	.220	.55	98.7
5 X 1.57	20.26	4.67	18.73	1.58	.92	4.01	1.42	4.500	.125	4.000	.220	.62	96.4
6 X 1.67	25.40	4.66	25.36	1.83	1.00	5.44	1.43	6.000	.160	3.000	.160	1.03	65.5
5 X 1.74	23.00	5.26	23.35	1.75	1.02	4.42	1.48	5.000	.125	4.000	.220	.68	94.5
7 X 1.77	27.98	5.20	30.44	2.00	1.09	5.85	1.51	6.500	.160	3.000	.160	1.11	64.6
5 X 1.82	25.74	5.91	28.54	1.93	1.11	4.83	1.55	5.500	.125	4.000	.220	.74	93.0
7 X 1.86	30.26	5.77	36.09	2.16	1.18	6.26	1.59	7.000	.160	3.000	.160	1.19	63.8
6 X 1.88	27.01	5.76	30.62	1.98	1.12	5.32	1.61	6.000	.160	3.500	.190	1.03	78.4
7 X 1.98	29.66	6.33	36.20	2.15	1.22	5.72	1.69	6.500	.160	3.500	.190	1.11	77.4
7 X 2.07	32.32	6.96	42.09	2.33	1.32	6.12	1.77	7.000	.160	3.500	.190	1.19	76.4
6 X 2.13	28.46	6.91	35.77	2.12	1.26	5.18	1.82	6.000	.160	4.000	.220	1.03	91.6
7 X 2.22	31.13	7.63	42.53	2.30	1.37	5.57	1.90	6.500	.160	4.000	.220	1.11	90.4
7 X 2.32	33.85	8.38	49.97	2.48	1.48	5.96	1.98	7.000	.160	4.000	.220	1.19	89.3
6 X 2.56	30.10	8.99	44.56	2.32	1.48	4.96	2.18	6.000	.160	5.000	.250	1.03	119.0
7 X 2.65	32.93	9.89	52.75	2.51	1.60	5.34	2.26	6.500	.160	5.000	.250	1.11	117.3
7 X 2.75	35.75	10.81	61.73	2.70	1.73	5.71	2.34	7.000	.160	5.000	.250	1.19	115.8
8 X 3.10	38.51	12.19	73.48	2.90	1.91	6.03	2.64	7.500	.190	5.000	.250	1.51	114.5
8 X 3.21	41.33	13.21	84.47	3.09	2.04	6.39	2.74	8.000	.190	5.000	.250	1.60	113.3
8 X 3.26	31.77	12.42	57.47	2.34	1.61	4.63	2.80	6.000	.160	5.000	.313	1.03	148.3
7 X 3.38	34.71	13.61	67.82	2.74	1.95	4.98	2.88	6.500	.160	5.000	.313	1.11	145.6
7 X 3.47	37.65	14.82	79.10	2.95	2.10	5.34	2.96	7.000	.160	6.000	.313	1.19	143.5
8 X 3.62	40.37	16.45	92.92	3.15	2.29	5.65	3.26	7.500	.190	6.000	.313	1.51	141.8
8 X 3.94	43.22	17.76	106.43	3.35	2.45	5.99	3.35	8.000	.190	6.000	.313	1.60	140.2
9 X 4.34	40.48	19.60	123.23	3.54	2.65	6.29	3.70	8.500	.220	6.000	.313	1.97	138.7
9 X 4.47	49.48	21.02	139.21	3.74	2.81	6.62	3.81	9.000	.220	6.000	.313	2.08	137.4
10 X 4.60	52.43	22.40	156.28	3.94	2.98	6.96	3.92	9.500	.220	6.000	.313	2.19	136.2
9 X 4.76	47.34	22.29	155.43	3.65	2.86	6.08	4.06	8.500	.220	6.000	.375	1.97	138.7
9 X 4.89	50.36	23.67	172.63	3.85	3.03	6.40	4.17	9.000	.220	6.000	.375	2.08	137.4
10 X 5.02	53.42	25.47	171.40	4.06	3.21	6.73	4.28	9.500	.220	6.000	.375	2.19	136.2
9 X 5.42	48.56	26.68	193.91	3.78	3.17	5.77	4.62	8.500	.220	7.500	.375	1.97	180.4
10 X 5.50	56.58	27.76	194.36	4.24	3.44	7.00	4.68	10.000	.250	6.000	.375	2.61	135.0
9 X 5.55	51.67	26.52	173.44	4.00	3.36	6.08	4.73	9.000	.220	7.500	.375	2.08	178.5
11 X 5.64	59.60	29.48	215.81	4.44	3.62	7.32	4.81	10.500	.250	6.000	.375	2.73	134.0
10 X 5.68	54.79	30.38	194.23	4.21	3.54	6.39	4.84	9.500	.220	7.500	.375	2.19	176.8
11 X 5.79	62.76	31.23	238.53	4.64	3.80	7.64	4.93	11.000	.250	6.000	.375	2.86	132.9

14.0 IN. EFFECTIVE WIDTH

.438 IN. PLATE (AREA= 6.13 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 9.92	57.43	30.88	269.59	4.33	3.05	6.79	5.05	10.000	.250	5.000	.438	2.61	135.0
11 X 6.07	60.57	32.76	282.55	4.54	3.84	7.10	5.17	10.300	.250	5.000	.436	2.73	134.0
10 X 6.16	58.09	32.89	219.19	4.39	3.77	6.06	5.25	10.000	.250	7.500	.375	2.61	175.2
11 X 6.21	63.75	34.68	256.85	4.74	4.03	7.41	5.30	11.000	.250	6.000	.438	2.80	132.9
11 X 6.36	61.26	34.86	243.03	4.60	3.97	6.97	5.37	10.300	.250	7.500	.375	2.73	173.8
11 X 6.49	64.45	36.87	268.23	4.80	4.16	7.28	5.50	11.000	.250	7.500	.375	2.86	172.4
12 X 7.36	70.72	40.41	319.83	5.08	4.52	7.91	6.29	12.000	.313	6.000	.438	3.89	131.0
13 X 7.56	73.99	42.56	349.25	5.27	4.72	8.21	6.45	12.300	.313	6.000	.436	4.05	130.1
12 X 7.62	71.55	42.79	333.01	5.14	4.65	7.78	6.49	12.000	.313	7.500	.375	3.89	169.9
13 X 7.80	74.80	43.02	363.73	5.34	4.86	8.08	6.65	12.300	.313	7.500	.375	4.05	169.0
13 X 7.98	74.98	40.25	370.09	5.35	4.94	8.06	6.80	12.500	.313	6.000	.500	4.05	130.1
13 X 7.99	78.19	47.29	395.98	5.53	5.06	8.37	6.81	13.000	.313	7.500	.375	4.21	167.7
13 X 8.16	78.33	48.59	402.94	5.55	5.14	8.29	6.95	13.000	.313	6.000	.500	4.21	129.2
14 X 8.17	81.53	49.60	429.80	5.73	5.27	8.67	6.90	13.500	.313	7.500	.375	4.36	166.7
14 X 8.35	81.70	50.95	437.37	5.75	5.35	8.58	7.11	13.500	.313	6.000	.500	4.36	128.4
12 X 8.41	73.19	49.73	368.28	5.26	5.03	7.41	7.16	12.000	.313	8.000	.438	3.89	183.2
13 X 8.59	76.00	52.25	401.87	5.47	5.25	7.69	7.32	12.300	.313	8.000	.438	4.05	182.0
13 X 8.78	80.02	54.81	437.11	5.67	5.46	7.98	7.46	13.000	.313	8.000	.438	4.21	180.8
14 X 8.96	83.47	57.40	474.02	5.87	5.68	8.26	7.63	13.300	.313	8.000	.436	4.36	179.7
12 X 8.97	74.04	54.46	390.39	5.53	5.27	7.17	7.54	12.000	.313	8.000	.500	3.89	183.2
13 X 9.15	77.50	57.21	425.85	5.53	5.49	7.44	7.80	12.500	.313	8.000	.500	4.05	182.0
13 X 9.34	80.99	59.97	463.03	5.73	5.72	7.72	7.95	13.000	.313	8.000	.500	4.21	180.8
14 X 9.52	84.49	62.77	501.94	5.94	5.94	8.00	8.11	13.500	.313	8.000	.500	4.36	179.7

14.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 7.00 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.57	.51	.84	.34	.33	1.67	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	4.16	.70	1.50	.45	.36	2.14	.49	2.000	.125	2.000	.125	.31	49.3
3 X .65	6.06	.92	2.40	.56	.40	2.60	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	8.18	1.16	3.55	.68	.43	3.07	.62	3.000	.125	2.000	.125	.44	45.8
3 X .72	6.72	1.08	2.80	.61	.42	2.58	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	8.96	1.35	4.11	.73	.46	3.04	.68	3.000	.125	2.500	.125	.44	59.5
4 X .87	11.36	1.84	5.73	.86	.50	3.50	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	13.60	1.95	7.08	.99	.55	3.95	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	16.49	2.27	9.99	1.13	.61	4.39	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	19.17	2.62	12.08	1.26	.66	4.84	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	15.87	2.59	10.03	1.12	.53	3.87	.97	4.000	.125	3.000	.160	.50	70.1
6 X 1.16	21.90	2.99	15.76	1.40	.72	5.28	.99	5.500	.125	2.500	.125	.75	53.7
5 X 1.21	18.64	3.00	12.92	1.27	.69	4.31	1.03	4.500	.125	3.000	.100	.63	68.7
5 X 1.28	21.47	3.43	16.25	1.42	.76	4.74	1.09	5.000	.125	3.000	.160	.69	67.5
5 X 1.35	24.33	3.87	20.03	1.57	.82	5.18	1.15	5.500	.125	3.000	.100	.75	66.5
4 X 1.66	18.85	4.12	15.22	1.35	.81	3.69	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	21.87	4.72	19.40	1.52	.89	4.11	1.42	4.500	.125	4.000	.220	.63	96.4
6 X 1.67	27.41	4.71	26.15	1.76	.85	5.55	1.43	6.000	.160	3.000	.100	1.04	65.5
5 X 1.74	24.92	5.33	24.16	1.69	.97	4.53	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	30.31	5.26	31.36	1.92	1.04	5.96	1.51	6.500	.100	3.000	.100	1.12	64.6
6 X 1.82	27.96	5.97	29.51	1.86	1.05	4.95	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	33.22	5.83	37.20	2.08	1.12	6.38	1.59	7.000	.160	3.000	.100	1.20	63.8
6 X 1.88	29.34	5.76	31.32	1.91	1.07	5.43	1.61	6.000	.160	3.500	.190	1.04	78.4
7 X 1.98	32.32	6.40	37.38	2.07	1.16	5.84	1.69	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	35.31	7.05	44.08	2.24	1.25	6.25	1.77	7.000	.160	3.500	.190	1.20	76.4
6 X 2.13	31.03	6.98	37.03	2.05	1.19	5.31	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	34.10	7.71	44.02	2.22	1.29	5.71	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	37.17	8.47	51.71	2.40	1.39	6.11	1.96	7.000	.160	4.000	.220	1.20	89.3
6 X 2.50	33.12	9.05	46.32	2.25	1.40	5.10	2.18	6.000	.160	5.000	.250	1.04	119.0
7 X 2.65	36.30	9.99	54.82	2.43	1.51	5.49	2.26	6.500	.160	5.000	.250	1.12	117.3
7 X 2.75	39.48	10.91	64.13	2.62	1.62	5.88	2.34	7.000	.160	5.000	.250	1.20	115.6
8 X 3.10	42.59	12.32	78.43	2.82	1.79	6.21	2.64	7.500	.190	5.000	.250	1.52	114.5
8 X 3.21	45.77	13.35	87.85	3.00	1.92	6.58	2.74	8.000	.190	5.000	.250	1.62	113.3
6 X 3.28	35.23	12.54	60.12	2.48	1.71	4.79	2.80	6.000	.160	6.000	.313	1.04	148.0
7 X 3.38	38.54	13.74	70.91	2.68	1.84	5.16	2.88	6.500	.160	6.000	.313	1.12	145.6
7 X 3.47	41.85	14.97	82.58	2.88	1.98	5.52	2.96	7.000	.160	6.000	.313	1.20	143.5
8 X 3.82	45.11	16.63	97.18	3.08	2.15	5.85	3.20	7.500	.190	6.000	.313	1.52	141.8
8 X 3.94	48.42	17.95	111.30	3.28	2.30	6.20	3.35	8.000	.190	6.000	.313	1.62	140.2
9 X 4.34	51.71	19.82	128.96	3.47	2.49	6.51	3.70	8.500	.220	6.000	.313	1.98	138.7
9 X 4.47	55.04	21.26	145.07	3.67	2.65	6.85	3.81	9.000	.220	6.000	.313	2.09	137.4
10 X 4.60	58.38	22.72	160.53	3.87	2.80	7.20	3.92	9.500	.220	6.000	.313	2.20	136.2
9 X 4.76	52.70	22.54	142.12	3.58	2.69	6.31	4.06	8.500	.220	6.000	.375	1.98	138.7
9 X 4.89	56.15	24.14	160.36	3.79	2.86	6.84	4.17	9.000	.220	6.000	.375	2.09	137.4
10 X 5.02	59.56	25.76	179.83	3.99	3.02	6.98	4.28	9.500	.220	6.000	.375	2.20	136.2
9 X 5.42	54.22	26.98	162.15	3.74	2.99	6.01	4.62	8.500	.220	7.500	.375	1.98	160.4
10 X 5.50	63.02	28.89	204.04	4.18	3.24	7.26	4.68	10.000	.250	6.000	.375	2.63	135.0
9 X 5.55	57.70	28.84	182.68	3.95	3.17	6.33	4.73	9.000	.220	7.500	.375	2.09	173.5
11 X 5.54	66.46	29.84	226.54	4.38	3.41	7.59	4.81	10.500	.250	6.000	.375	2.75	134.0
10 X 5.68	61.19	30.73	204.55	4.16	3.34	6.56	4.84	9.500	.220	7.500	.375	2.20	176.8
11 X 5.79	69.91	31.62	250.38	4.58	3.58	7.92	4.93	11.000	.250	6.000	.375	2.88	132.9

14.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 7.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	64.03	31.26	220.54	4.28	3.44	7.06	5.05	10.000	.250	5.000	.438	2.63	135.0
11 X 6.07	67.53	33.17	244.67	4.48	3.62	7.38	5.17	10.500	.250	5.000	.438	2.75	134.0
10 X 6.16	64.80	33.29	250.96	4.34	3.56	6.94	5.25	10.000	.250	7.500	.375	2.63	175.2
11 X 6.21	71.04	35.11	270.20	4.69	3.80	7.70	5.30	11.000	.250	5.000	.438	2.88	132.9
11 X 6.36	68.33	35.29	255.97	4.55	3.75	7.25	5.37	10.500	.250	7.500	.375	2.75	173.8
11 X 6.45	71.87	37.52	282.48	4.75	3.93	7.57	5.50	11.000	.250	7.500	.375	2.88	172.4
12 X 7.38	76.59	40.39	336.72	5.03	4.28	8.22	6.29	12.000	.313	6.000	.438	3.91	131.0
13 X 7.50	82.21	43.17	387.99	5.23	4.46	8.52	6.45	12.500	.313	6.000	.438	4.07	130.1
12 X 7.62	79.54	43.59	350.93	5.10	4.41	8.09	6.49	12.000	.313	7.500	.375	3.91	169.9
13 X 7.80	85.19	45.66	383.26	5.30	4.61	8.39	6.65	12.500	.313	7.500	.375	4.07	168.8
13 X 7.98	85.34	46.92	390.20	5.32	4.68	8.32	6.80	12.500	.313	6.000	.500	4.07	130.1
13 X 7.99	86.86	47.97	417.21	5.50	4.80	8.70	6.81	13.000	.313	7.500	.375	4.23	167.7
13 X 8.16	87.04	49.29	424.85	5.52	4.88	8.62	6.95	13.000	.313	6.000	.500	4.23	129.2
14 X 8.17	90.22	50.32	452.61	5.69	5.10	9.00	6.96	13.500	.313	7.500	.375	4.38	166.7
14 X 8.35	90.75	51.70	461.11	5.72	5.18	8.92	7.11	13.500	.313	8.000	.500	4.38	128.4
12 X 8.41	81.46	50.43	389.27	5.24	4.78	7.72	7.16	12.000	.313	8.000	.438	3.91	183.2
13 X 8.59	89.19	52.99	424.70	5.45	4.99	8.61	7.32	12.500	.313	8.000	.438	4.07	182.0
13 X 8.78	88.96	55.59	401.87	5.65	5.19	8.31	7.48	13.000	.313	8.000	.438	4.23	180.8
14 X 8.90	92.76	58.22	500.79	5.85	5.40	8.60	7.63	13.500	.313	8.000	.438	4.38	179.7
12 X 8.97	82.41	55.20	413.48	5.31	5.02	7.48	7.64	12.000	.313	8.000	.500	3.91	183.2
13 X 9.15	86.23	56.03	450.93	5.52	5.23	7.77	7.80	12.500	.313	8.000	.500	4.07	182.0
13 X 9.34	90.07	60.84	490.20	5.73	5.44	8.46	7.95	13.000	.313	8.000	.500	4.23	180.8
14 X 9.52	93.93	63.67	531.28	5.93	5.66	8.34	8.11	13.500	.313	8.000	.500	4.38	179.7

14.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 8.75 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.44	.53	.92	.32	.38	1.75	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	4.00	.73	1.02	.42	.41	2.22	.49	2.000	.125	2.000	.125	.33	49.3
3 X .65	5.89	.95	2.56	.52	.43	2.09	.55	2.500	.125	2.000	.125	.39	47.3
3 X .72	6.87	1.19	3.77	.63	.47	3.16	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	6.61	1.12	2.99	.56	.45	2.67	.62	2.500	.125	2.500	.125	.39	61.7
3 X .80	8.96	1.39	4.36	.68	.49	3.14	.68	3.000	.125	2.500	.125	.45	59.5
4 X .87	11.53	1.68	8.85	.80	.53	3.60	.74	3.500	.125	2.500	.125	.52	57.9
4 X .94	14.30	1.99	8.09	.92	.57	4.00	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	17.23	2.32	10.49	1.04	.61	4.52	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	20.28	2.67	13.29	1.17	.66	4.97	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	18.75	2.65	10.59	1.04	.63	3.99	.97	4.000	.125	3.000	.160	.58	70.1
6 X 1.16	23.44	3.04	16.58	1.30	.70	5.42	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	19.93	3.06	13.61	1.18	.68	4.44	1.03	4.500	.125	3.000	.160	.64	68.7
5 X 1.26	23.20	3.49	17.08	1.32	.74	4.89	1.09	5.000	.125	3.000	.160	.70	67.5
6 X 1.35	26.56	3.94	21.02	1.40	.79	5.33	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.50	28.69	4.21	16.17	1.20	.78	3.84	1.30	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	24.24	4.81	20.57	1.42	.85	4.28	1.42	4.500	.125	4.000	.220	.64	96.4
6 X 1.67	30.43	4.81	27.51	1.64	.90	5.72	1.43	6.000	.160	3.000	.160	1.06	65.5
5 X 1.74	27.65	5.43	25.57	1.58	.92	4.71	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	33.91	5.30	32.99	1.79	.87	6.19	1.51	6.500	.160	3.000	.160	1.14	64.6
6 X 1.82	31.52	6.07	31.19	1.74	.99	5.14	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	37.43	5.94	39.09	1.94	1.04	6.58	1.59	7.000	.160	3.000	.160	1.22	63.6
6 X 1.88	32.99	7.07	33.04	1.79	1.00	5.62	1.61	6.000	.160	3.500	.190	1.06	78.4
7 X 1.96	38.59	6.52	39.41	1.94	1.08	6.05	1.69	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	40.22	7.18	40.45	2.10	1.16	6.47	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	35.31	7.11	39.20	1.93	1.11	5.51	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	39.02	7.85	46.56	2.09	1.19	5.93	1.90	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	42.75	8.61	54.67	2.26	1.28	6.35	1.98	7.000	.160	4.000	.220	1.22	89.3
6 X 2.36	38.25	9.24	49.32	2.12	1.29	5.34	2.18	6.000	.160	5.000	.250	1.06	119.0
7 X 2.45	42.11	10.16	60.62	2.30	1.38	5.74	2.20	6.500	.160	5.000	.250	1.14	117.3
7 X 2.75	45.98	11.10	68.19	2.48	1.48	6.14	2.34	7.000	.160	5.000	.250	1.22	115.6
8 X 3.10	49.82	12.54	81.40	2.67	1.63	6.49	2.64	7.500	.190	5.000	.250	1.54	114.5
8 X 3.21	53.76	13.59	93.54	2.83	1.74	6.88	2.74	8.000	.190	5.000	.250	1.64	113.3
6 X 3.28	41.34	12.77	64.63	2.37	1.56	5.06	2.80	6.000	.160	5.000	.313	1.06	148.0
7 X 3.38	45.37	13.98	76.16	2.56	1.68	5.45	2.88	6.500	.160	5.000	.313	1.14	145.6
7 X 3.47	49.41	15.22	88.72	2.75	1.80	5.83	2.96	7.000	.160	5.000	.313	1.22	143.5
8 X 3.82	53.37	16.92	104.59	2.95	1.96	6.17	3.26	7.500	.190	5.000	.313	1.54	141.8
8 X 3.94	57.41	18.26	119.51	3.14	2.08	6.54	3.35	8.000	.190	5.000	.313	1.64	140.2
9 X 4.34	61.38	20.19	138.05	3.34	2.26	6.87	3.70	8.500	.220	5.000	.313	2.01	138.7
8 X 4.47	65.42	21.65	150.59	3.53	2.39	7.23	3.81	9.000	.220	5.000	.313	2.12	137.4
10 X 4.60	69.47	23.14	175.76	3.72	2.53	7.59	3.92	9.500	.220	5.000	.313	2.23	136.2
9 X 4.76	62.85	22.96	153.46	3.46	2.44	6.68	4.06	8.500	.220	5.000	.375	2.01	138.7
9 X 4.89	66.97	24.59	173.10	3.66	2.58	7.04	4.17	9.000	.220	5.000	.375	2.12	137.4
10 X 5.02	71.10	26.24	194.07	3.86	2.73	7.40	4.28	9.500	.220	5.000	.375	2.23	136.2
9 X 5.42	64.89	27.49	170.19	3.63	2.72	6.41	4.62	8.500	.220	7.500	.375	2.01	180.4
10 X 5.50	75.20	28.00	220.47	4.05	2.93	7.69	4.68	10.000	.250	5.000	.375	2.66	135.0
9 X 5.55	69.11	29.68	196.41	3.84	2.87	6.75	4.73	9.000	.220	7.500	.375	2.12	178.5
11 X 5.04	79.35	30.44	244.77	4.25	3.08	8.04	4.81	10.500	.250	6.000	.375	2.78	134.0
10 X 5.66	73.33	31.30	222.09	4.04	3.03	7.10	4.84	9.500	.220	7.500	.375	2.23	176.8
11 X 5.79	83.50	32.26	270.50	4.45	3.24	8.39	4.93	11.000	.250	6.000	.375	2.91	132.9

84.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA= 8.75 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	76.58	31.88	239.18	4.16	3.12	7.50	5.05	10.000	.250	6.000	.438	2.66	135.0
11 X 6.47	86.79	33.84	265.31	4.37	3.28	7.84	5.17	10.500	.250	5.000	.438	2.78	134.0
10 X 6.16	77.58	33.94	250.88	4.23	3.23	7.39	5.29	10.000	.250	7.500	.375	2.66	175.2
11 X 6.21	85.02	35.82	292.96	4.57	3.45	8.18	5.30	11.000	.250	5.000	.438	2.91	132.9
11 X 5.30	81.83	35.99	278.07	4.44	3.40	7.73	5.37	10.500	.250	7.500	.375	2.78	173.6
11 X 6.45	86.09	38.06	300.81	4.64	3.56	8.00	5.90	11.000	.250	7.500	.375	2.91	172.4
12 X 7.36	93.74	41.94	305.80	4.93	3.90	8.72	6.29	12.000	.313	6.000	.438	3.95	131.0
13 X 7.56	98.05	44.18	399.74	5.13	4.08	9.05	6.45	12.500	.313	6.000	.438	4.11	130.1
12 X 7.02	94.93	44.38	381.79	5.00	4.02	8.60	6.49	12.000	.313	7.500	.375	3.95	169.9
13 X 7.80	99.27	40.71	416.96	5.20	4.20	8.93	6.65	12.500	.313	7.500	.375	4.11	168.8
13 X 7.98	99.50	48.02	425.08	5.23	4.27	8.85	6.80	12.500	.313	6.000	.500	4.11	130.1
13 X 7.39	103.63	49.09	453.83	5.40	4.36	9.25	6.81	13.000	.313	7.500	.375	4.26	167.7
13 X 8.16	103.85	50.45	462.71	5.43	4.45	9.17	6.95	13.000	.313	6.000	.500	4.26	129.2
14 X 8.17	108.00	51.49	492.52	5.60	4.56	9.56	6.96	13.500	.313	7.500	.375	4.42	166.7
14 X 8.35	108.29	52.92	502.15	5.63	4.64	9.49	7.11	13.500	.313	6.000	.500	4.42	126.4
12 X 8.41	97.37	51.57	425.65	5.17	4.37	8.25	7.16	12.000	.313	8.000	.438	3.95	183.2
13 X 8.59	101.83	54.21	464.30	5.37	4.56	8.57	7.32	12.500	.313	8.000	.438	4.11	182.0
13 X 8.78	106.31	56.87	504.82	5.56	4.75	8.38	7.48	13.000	.313	8.000	.438	4.26	180.8
14 X 8.90	110.80	59.28	547.20	5.78	4.94	9.19	7.63	13.500	.313	8.000	.438	4.42	179.7
12 X 8.87	98.00	56.52	453.66	5.20	4.00	8.03	7.64	12.000	.313	8.000	.500	3.95	183.2
13 X 9.15	103.19	59.36	494.61	5.47	4.79	8.33	7.80	12.500	.313	8.000	.500	4.11	182.0
13 X 9.34	107.74	62.24	537.22	5.67	4.99	8.64	7.95	13.000	.313	8.000	.500	4.26	180.8
14 X 9.52	112.30	65.16	582.42	5.88	5.19	8.94	8.11	13.500	.313	8.000	.500	4.42	179.7

14.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA=10.50 SQ. IN.)

NUM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.32	.55	1.01	.30	.43	1.82	.43	1.500	.125	2.000	.125	.28	53.2
2 X .58	3.81	.76	1.74	.40	.46	2.29	.49	2.000	.125	2.000	.125	.34	49.3
3 X .65	5.66	.98	2.72	.50	.48	2.77	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	7.62	1.23	3.97	.60	.51	3.24	.62	3.000	.125	2.000	.125	.47	45.8
3 X .72	6.40	1.15	3.17	.53	.50	2.75	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	8.75	1.43	4.60	.64	.53	3.22	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	11.39	1.72	6.36	.75	.56	3.69	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	14.27	2.04	8.47	.87	.59	4.16	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	17.37	2.37	10.96	.98	.63	4.62	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	20.66	2.73	13.85	1.10	.67	5.08	.93	5.000	.125	2.500	.125	.72	54.6
4 X 1.13	17.05	2.71	11.10	.98	.65	4.10	.97	4.000	.125	3.000	.160	.59	70.1
5 X 1.16	24.10	3.10	17.17	1.22	.71	5.54	.99	5.500	.125	2.500	.125	.78	53.7
5 X 1.21	20.48	3.12	14.22	1.11	.69	4.56	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	24.07	3.56	17.82	1.24	.74	5.01	1.09	5.000	.125	3.000	.160	.72	67.5
6 X 1.35	27.79	4.01	21.90	1.37	.79	5.46	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.50	21.76	4.29	17.03	1.20	.78	3.97	1.30	4.000	.125	4.000	.220	.59	98.7
5 X 1.67	25.75	4.90	21.01	1.35	.87	4.41	1.42	4.500	.125	4.000	.220	.66	96.4
6 X 1.67	32.35	4.89	26.70	1.55	.89	5.06	1.43	6.000	.160	3.000	.160	1.08	62.5
5 X 1.74	29.79	5.53	26.80	1.50	.90	4.85	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	36.32	5.46	34.39	1.69	.99	6.30	1.51	6.500	.160	3.000	.160	1.16	64.6
6 X 1.82	33.94	6.17	32.64	1.65	.96	5.29	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.80	40.36	6.64	40.72	1.84	1.01	6.74	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	35.51	6.98	34.93	1.69	.97	5.78	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.98	39.64	6.62	41.15	1.84	1.04	6.21	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	43.62	7.30	46.47	1.99	1.11	6.64	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	36.43	7.23	41.06	1.83	1.07	5.68	1.82	6.000	.160	4.000	.220	1.08	91.6
7 X 2.22	42.71	7.98	48.73	1.96	1.14	6.11	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	47.03	8.75	57.17	2.14	1.22	6.53	1.98	7.000	.160	4.000	.220	1.24	89.3
6 X 2.56	42.25	9.39	51.67	2.02	1.23	5.52	2.18	6.000	.160	5.000	.250	1.08	119.0
7 X 2.65	48.73	10.32	61.26	2.19	1.31	5.94	2.26	6.500	.160	5.000	.250	1.16	117.3
7 X 2.75	51.24	11.27	71.59	2.36	1.40	6.35	2.34	7.000	.160	5.000	.250	1.24	115.8
8 X 3.10	55.82	12.74	85.26	2.55	1.53	6.72	2.64	7.500	.190	5.000	.250	1.57	114.5
8 X 3.21	60.36	13.80	96.28	2.72	1.63	7.12	2.74	8.000	.190	5.000	.250	1.66	113.3
6 X 3.28	46.43	12.97	68.44	2.27	1.47	5.28	2.80	6.000	.160	6.000	.313	1.08	148.0
7 X 3.38	51.13	14.20	80.50	2.49	1.58	5.67	2.88	6.500	.160	6.000	.313	1.16	145.6
7 X 3.47	55.85	15.45	93.77	2.64	1.68	6.07	2.96	7.000	.160	6.000	.313	1.24	143.5
8 X 3.82	60.53	17.18	110.41	2.83	1.82	6.43	3.26	7.500	.190	6.000	.313	1.57	141.8
8 X 3.94	65.27	18.54	126.33	3.02	1.94	6.81	3.35	8.000	.190	6.000	.313	1.66	140.2
9 X 4.34	69.95	20.51	140.71	3.21	2.10	7.15	3.70	8.500	.220	6.000	.313	2.04	138.7
9 X 4.47	74.69	21.99	165.65	3.40	2.22	7.53	3.81	9.000	.220	6.000	.313	2.15	137.4
10 X 4.60	79.44	23.50	185.69	3.59	2.34	7.91	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	71.92	23.62	182.90	3.35	2.27	6.98	4.06	8.500	.220	6.000	.375	2.04	138.7
9 X 4.89	76.79	24.97	183.76	3.54	2.39	7.36	4.17	9.000	.220	6.000	.375	2.15	137.4
10 X 5.02	81.59	26.65	209.90	3.73	2.52	7.73	4.28	9.500	.220	6.000	.375	2.26	136.2
9 X 5.42	74.62	27.92	167.93	3.53	2.52	6.73	4.62	8.500	.220	7.500	.375	2.04	180.4
10 X 5.50	66.37	29.13	234.14	3.93	2.71	8.04	4.68	10.000	.250	6.000	.375	2.69	135.0
9 X 5.59	79.57	29.83	211.54	3.73	2.56	7.09	4.73	9.000	.220	7.500	.375	2.15	178.5
11 X 5.64	91.22	30.94	259.91	4.12	2.85	8.40	4.81	10.500	.250	6.000	.375	2.81	134.0
10 X 5.68	84.52	31.77	236.09	3.93	2.80	7.45	4.84	9.500	.220	7.500	.375	2.26	176.8
11 X 5.79	96.07	32.78	267.21	4.31	2.99	8.76	4.93	11.000	.250	6.000	.375	2.94	132.9

14.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA=10.50 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	88.17	32.41	254.74	4.05	2.89	7.86	5.05	10.000	.250	6.000	.438	2.69	135.0
11 X 6.07	93.10	34.39	282.51	4.25	3.03	8.22	5.17	10.500	.250	6.000	.438	2.81	134.0
10 X 6.16	89.43	34.49	267.58	4.12	2.99	7.76	5.25	10.000	.250	7.500	.375	2.69	175.2
11 X 6.21	96.04	36.46	311.90	4.44	3.18	8.57	5.30	11.000	.250	6.000	.438	2.94	132.9
11 X 6.30	94.40	36.50	296.51	4.32	3.14	8.11	5.37	10.500	.250	7.500	.375	2.81	173.8
11 X 6.45	99.38	38.07	327.13	4.52	3.29	8.46	5.50	11.000	.250	7.500	.375	2.94	172.4
12 X 7.38	108.01	42.71	390.22	4.62	3.61	9.14	6.29	12.000	.313	6.000	.438	3.99	131.0
13 X 7.50	113.01	45.00	426.42	5.02	3.77	9.48	6.45	12.500	.313	6.000	.438	4.15	130.1
12 X 7.62	109.46	43.18	407.77	4.98	3.73	9.62	6.49	12.000	.313	7.500	.375	3.99	169.9
13 X 7.80	114.50	47.57	445.27	5.10	3.89	9.36	6.65	12.500	.313	7.500	.375	4.15	168.6
13 X 7.98	114.63	48.90	454.42	5.13	3.96	9.29	6.80	12.500	.313	6.000	.500	4.15	130.1
13 X 7.99	119.55	49.39	484.69	5.29	4.05	9.70	6.81	13.000	.313	7.500	.375	4.30	167.7
13 X 8.16	119.91	51.39	494.61	5.32	4.12	9.63	6.95	13.000	.313	8.000	.500	4.30	129.2
14 X 8.17	124.61	52.44	525.95	5.49	4.22	10.03	6.96	13.500	.313	7.500	.375	4.46	166.7
14 X 8.35	125.40	53.91	538.74	5.52	4.29	9.96	7.11	13.500	.313	8.000	.500	4.46	128.4
12 X 8.41	112.53	52.50	456.43	5.08	4.06	8.69	7.16	12.000	.313	8.000	.438	3.99	183.2
13 X 8.59	117.69	55.19	497.80	5.29	4.23	9.02	7.32	12.500	.313	8.000	.438	4.15	182.0
13 X 8.78	122.87	57.91	541.18	5.49	4.40	9.35	7.48	13.000	.313	8.000	.438	4.30	180.8
14 X 8.96	128.07	60.56	586.60	5.69	4.56	9.67	7.63	13.500	.313	8.000	.438	4.46	179.7
12 X 8.97	114.17	57.54	467.80	5.19	4.27	8.48	7.64	12.000	.313	8.000	.500	3.99	183.2
13 X 9.15	119.41	60.44	531.71	5.39	4.45	8.80	7.80	12.500	.313	8.000	.500	4.15	182.0
13 X 9.34	124.67	63.38	577.73	5.60	4.63	9.12	7.95	13.000	.313	8.000	.500	4.30	180.8
14 X 9.52	129.94	66.35	625.66	5.80	4.82	9.43	8.11	13.500	.313	8.000	.500	4.46	179.7

14.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=12.25 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.22	.58	1.09	.29	.49	1.89	.43	1.500	.125	2.000	.125	.30	53.2
2 X .58	3.64	.78	1.80	.38	.51	2.37	.49	2.000	.125	2.000	.125	.36	49.3
3 X .63	5.41	1.01	2.88	.47	.53	2.84	.55	2.500	.125	2.000	.125	.42	47.3
3 X .72	7.52	1.26	4.16	.57	.56	3.32	.62	3.000	.125	2.000	.125	.48	45.8
3 X .72	8.16	1.19	3.36	.51	.54	2.83	.62	2.500	.125	2.500	.125	.42	61.7
3 X .80	8.47	1.46	4.84	.61	.57	3.30	.68	3.000	.125	2.500	.125	.48	59.5
4 X .87	11.10	1.76	8.66	.72	.60	3.78	.74	3.500	.125	2.500	.125	.55	57.9
4 X .94	14.01	2.08	8.83	.82	.63	4.24	.80	4.000	.125	2.500	.125	.61	56.6
5 X 1.02	17.19	2.42	11.40	.93	.66	4.71	.87	4.500	.125	2.500	.125	.67	55.6
5 X 1.09	20.60	2.78	14.38	1.04	.70	5.18	.93	5.000	.125	2.500	.125	.73	54.8
4 X 1.13	17.00	2.76	11.59	.94	.68	4.19	.97	4.000	.125	3.000	.160	.61	70.1
5 X 1.15	24.21	3.16	17.79	1.16	.73	5.64	.99	5.500	.125	2.500	.125	.80	53.7
5 X 1.21	20.57	3.18	14.61	1.06	.72	4.66	1.03	4.500	.125	3.000	.160	.67	68.7
5 X 1.26	24.36	3.62	18.51	1.18	.76	5.12	1.09	5.000	.125	3.000	.160	.73	67.5
5 X 1.35	28.32	4.08	22.72	1.30	.80	5.57	1.15	5.500	.125	3.000	.160	.80	66.5
6 X 1.50	22.34	4.37	17.83	1.14	.80	4.68	1.36	4.000	.125	4.000	.220	.61	98.7
5 X 1.67	26.57	4.99	22.56	1.28	.85	4.53	1.42	4.500	.125	4.000	.220	.67	96.4
6 X 1.67	33.45	4.98	29.79	1.48	.89	5.98	1.43	6.000	.160	3.000	.160	1.10	65.5
5 X 1.74	30.90	5.52	27.93	1.43	.90	4.97	1.48	5.000	.125	4.000	.220	.73	94.5
7 X 1.77	37.00	5.54	35.66	1.61	.94	6.43	1.51	6.000	.160	3.000	.160	1.18	64.6
6 X 1.82	35.49	6.27	33.95	1.57	.96	5.42	1.55	5.500	.125	4.000	.220	.80	93.8
7 X 1.80	42.26	6.13	42.19	1.75	1.00	6.38	1.59	7.000	.160	3.000	.160	1.26	63.8
6 X 1.88	37.12	6.67	35.88	1.61	.97	5.91	1.61	6.000	.160	3.500	.190	1.10	78.4
7 X 1.98	41.66	6.73	42.71	1.75	1.02	6.35	1.69	6.500	.160	3.500	.190	1.18	77.4
7 X 2.07	46.33	7.40	50.28	1.89	1.09	6.79	1.77	7.000	.160	3.500	.190	1.26	76.4
6 X 2.13	40.59	7.34	42.73	1.74	1.05	5.82	1.82	6.000	.160	4.000	.220	1.10	91.6
7 X 2.22	45.36	8.09	50.66	1.89	1.12	6.26	1.90	6.500	.160	4.000	.220	1.18	90.4
7 X 2.32	50.20	8.88	59.39	2.04	1.18	6.69	1.98	7.000	.160	4.000	.220	1.26	89.3
8 X 2.36	45.27	9.23	54.14	1.94	1.20	5.68	2.18	6.000	.160	5.000	.250	1.10	119.0
7 X 2.45	50.30	10.47	63.90	2.10	1.27	6.10	2.26	6.500	.160	5.000	.250	1.18	117.3
7 X 2.75	55.38	11.42	74.58	2.26	1.35	6.53	2.34	7.000	.160	5.000	.250	1.26	115.8
8 X 3.10	66.68	12.92	89.20	2.45	1.47	6.90	2.64	7.500	.190	5.000	.250	1.59	114.5
8 X 3.21	65.83	13.99	102.41	2.61	1.56	7.32	2.74	8.000	.190	5.000	.250	1.69	113.3
6 X 3.28	50.55	13.16	71.81	2.18	1.42	5.45	2.80	6.000	.160	6.000	.313	1.10	148.0
7 X 3.38	55.87	14.40	84.43	2.36	1.51	5.86	2.88	6.500	.160	6.000	.313	1.18	145.6
7 X 3.47	61.23	15.66	98.18	2.54	1.60	6.27	2.96	7.000	.160	6.000	.313	1.26	143.5
8 X 3.82	66.62	17.42	115.05	2.73	1.74	6.64	3.26	7.500	.190	6.000	.313	1.59	141.8
8 X 3.94	72.02	18.79	132.24	2.91	1.84	7.04	3.35	8.000	.190	6.000	.313	1.69	140.2
9 X 4.34	77.42	20.80	153.69	3.10	1.99	7.39	3.70	8.500	.220	6.000	.313	2.06	138.7
9 X 4.47	82.84	22.29	173.46	3.29	2.09	7.78	3.81	9.000	.220	6.000	.313	2.17	137.4
10 X 4.60	88.27	23.82	194.61	3.47	2.20	8.17	3.92	9.500	.220	6.000	.313	2.28	136.2
9 X 4.76	79.94	23.65	171.06	3.24	2.14	7.23	4.06	8.500	.220	6.000	.375	2.06	138.7
9 X 4.89	85.40	25.31	192.84	3.43	2.26	7.62	4.17	9.000	.220	6.000	.375	2.17	137.4
10 X 5.02	91.00	27.01	216.07	3.62	2.37	8.00	4.28	9.500	.220	6.000	.375	2.28	136.2
9 X 5.42	83.39	26.30	198.00	3.43	2.38	7.00	4.62	8.500	.220	7.500	.375	2.06	160.4
10 X 5.53	98.48	29.54	245.92	3.81	2.55	8.33	4.68	10.000	.250	6.000	.375	2.72	135.0
9 X 5.59	89.05	30.23	222.87	3.62	2.50	7.37	4.73	9.000	.220	7.500	.375	2.17	176.5
11 X 5.04	102.03	31.37	272.94	4.00	2.68	8.70	4.81	10.500	.250	6.000	.375	2.84	134.0
10 X 5.68	94.71	32.19	249.28	3.82	2.63	7.74	4.84	9.500	.220	7.500	.375	2.28	176.8
11 X 5.79	107.58	33.24	301.56	4.19	2.80	9.07	4.93	11.000	.250	6.000	.375	2.97	132.9

14.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=12.25 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	90.77	32.86	268.15	3.94	2.72	8.16	5.05	10.000	.250	6.000	.438	2.72	135.0
11 X 6.37	104.40	34.87	297.32	4.13	2.85	8.53	5.17	10.500	.250	6.000	.438	2.84	134.0
10 X 6.16	100.32	34.97	281.98	4.01	2.81	8.66	5.25	10.000	.250	7.500	.375	2.72	175.2
11 X 6.21	110.04	36.91	328.19	4.32	2.98	8.89	5.30	11.000	.250	6.000	.438	2.97	132.9
11 X 6.30	105.99	37.07	312.39	4.21	2.95	8.43	5.37	10.500	.250	7.500	.375	2.84	173.8
11 X 6.45	111.66	39.20	344.55	4.41	3.09	8.79	5.50	11.000	.250	7.500	.375	2.97	172.4
12 X 7.38	121.33	43.37	411.34	4.71	3.39	9.48	6.29	12.000	.313	6.000	.438	4.03	131.0
13 X 7.00	127.02	+5.89	449.47	4.90	3.54	9.84	6.45	12.500	.313	6.000	.438	4.19	130.1
12 X 7.02	123.07	+5.87	436.24	4.79	3.50	9.38	6.49	12.000	.313	7.500	.375	4.03	169.9
13 X 7.80	128.80	+6.29	469.77	4.99	3.65	9.73	6.65	12.500	.313	7.500	.375	4.19	168.8
13 X 7.96	129.25	+9.66	479.81	5.02	3.71	9.66	6.80	12.500	.313	6.000	.500	4.19	130.1
13 X 7.99	134.54	50.75	511.29	5.15	3.80	10.07	6.81	13.000	.313	7.500	.375	4.34	167.7
13 X 8.16	135.02	52.18	522.21	5.21	3.87	10.01	6.95	13.000	.313	6.000	.500	4.34	129.2
14 X 8.17	140.30	53.25	554.84	5.37	3.95	10.42	6.96	13.500	.313	7.500	.375	4.50	166.7
14 X 8.35	140.81	54.75	566.00	5.41	4.02	10.35	7.11	13.500	.313	6.000	.500	4.50	128.4
12 X 8.41	126.84	53.29	483.15	4.99	3.81	9.07	7.16	12.000	.313	8.000	.438	4.03	163.2
13 X 8.59	132.71	56.02	526.86	5.19	3.97	9.41	7.32	12.500	.313	8.000	.438	4.19	162.0
13 X 8.78	136.59	56.78	572.70	5.39	4.13	9.74	7.48	13.000	.313	8.000	.438	4.34	160.8
14 X 8.96	144.49	61.58	620.71	5.59	4.30	10.08	7.63	13.500	.313	8.000	.438	4.50	179.7
12 X 8.87	126.87	58.41	517.50	5.10	4.02	8.86	7.64	12.000	.313	8.000	.500	4.03	163.2
13 X 9.15	134.83	61.35	563.98	5.30	4.18	9.19	7.80	12.500	.313	8.000	.500	4.19	162.0
13 X 9.34	140.80	64.33	612.69	5.51	4.35	9.52	7.95	13.000	.313	8.000	.500	4.34	160.8
14 X 9.52	146.79	67.35	663.66	5.71	4.52	9.85	8.11	13.500	.313	8.000	.500	4.50	179.7

14.0 IN. EFFECTIVE WIDTH

1.600 IN. PLATE (AREA=14.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.15	.60	1.18	.29	.55	1.95	.43	1.500	.125	2.000	.125	.31	53.2
2 X .58	3.50	.81	1.95	.37	.57	2.43	.49	2.000	.125	2.000	.125	.38	49.3
3 X .65	5.19	1.04	3.04	.46	.58	2.92	.55	2.500	.125	2.000	.125	.44	47.3
3 X .72	7.23	1.29	4.39	.55	.61	3.39	.62	3.000	.125	2.000	.125	.50	45.8
3 X .72	5.93	1.22	3.54	.49	.60	2.90	.62	2.500	.125	2.500	.125	.44	61.7
3 X .80	8.18	1.50	5.08	.59	.62	3.38	.68	3.000	.125	2.500	.125	.50	59.5
4 X .87	10.76	1.80	6.95	.69	.65	3.85	.74	3.500	.125	2.500	.125	.56	57.9
4 X .94	13.65	2.12	9.19	.79	.67	4.33	.80	4.000	.125	2.500	.125	.63	56.6
5 X 1.02	16.83	2.47	11.83	.89	.70	4.80	.87	4.500	.125	2.500	.125	.69	55.6
5 X 1.09	20.29	2.83	14.89	1.00	.73	5.27	.93	5.000	.125	2.500	.125	.75	54.6
4 X 1.13	16.76	2.62	12.00	.90	.72	4.28	.97	4.000	.125	3.000	.160	.63	70.1
6 X 1.16	23.99	3.21	18.39	1.11	.77	5.73	.99	5.500	.125	2.500	.125	.81	53.7
5 X 1.21	20.40	3.24	15.57	1.01	.75	4.75	1.03	4.500	.125	3.000	.160	.69	68.7
5 X 1.28	24.29	3.68	19.18	1.13	.79	5.21	1.09	5.000	.125	3.000	.160	.75	67.5
5 X 1.35	28.40	4.14	23.49	1.25	.83	5.67	1.15	5.500	.125	3.000	.160	.81	66.5
4 X 1.60	22.54	4.45	18.60	1.10	.83	4.17	1.36	4.000	.125	4.000	.220	.63	98.7
5 X 1.67	26.95	5.07	23.47	1.23	.87	4.63	1.42	4.500	.125	4.000	.220	.69	96.4
6 X 1.67	33.90	5.66	30.81	1.41	.91	5.09	1.43	6.000	.160	3.000	.160	1.12	65.5
5 X 1.74	31.58	5.70	28.99	1.37	.92	5.08	1.48	5.000	.125	4.000	.220	.75	94.5
7 X 1.77	38.29	5.03	30.87	1.24	.95	6.55	1.51	6.500	.160	3.000	.160	1.20	64.6
6 X 1.82	36.39	6.36	35.18	1.50	.97	5.53	1.55	5.500	.125	4.000	.220	.81	93.0
7 X 1.86	43.37	6.23	43.55	1.67	1.00	7.00	1.59	7.000	.160	3.000	.160	1.28	65.8
6 X 1.88	38.65	6.17	37.14	1.54	.96	6.02	1.61	6.000	.160	3.500	.190	1.12	78.4
7 X 1.98	42.95	6.82	44.17	1.68	1.03	6.47	1.59	6.500	.160	3.500	.190	1.20	77.4
7 X 2.07	47.96	7.51	51.94	1.82	1.08	6.92	1.77	7.000	.160	3.500	.190	1.28	76.4
6 X 2.13	42.01	7.45	44.28	1.67	1.05	5.95	1.82	6.000	.160	4.000	.220	1.12	91.6
7 X 2.22	47.16	8.21	52.44	1.82	1.11	6.39	1.90	6.500	.160	4.000	.220	1.20	90.4
7 X 2.32	52.43	9.00	61.43	1.96	1.17	6.83	1.98	7.000	.160	4.000	.220	1.28	89.3
6 X 2.56	47.46	9.07	56.23	1.86	1.18	5.82	2.18	6.000	.160	5.000	.250	1.12	119.0
7 X 2.65	52.95	10.61	66.29	2.02	1.25	6.25	2.26	6.500	.160	5.000	.250	1.20	117.3
7 X 2.75	58.53	11.27	77.30	2.18	1.32	6.68	2.34	7.000	.160	5.000	.250	1.28	115.8
8 X 3.10	64.51	13.09	92.49	2.36	1.43	7.07	2.64	7.500	.190	5.000	.250	1.62	114.5
8 X 3.21	70.23	14.17	106.13	2.52	1.51	7.49	2.74	8.000	.190	5.000	.250	1.71	113.3
6 X 3.28	53.83	13.35	74.87	2.11	1.39	5.61	2.80	6.000	.160	6.000	.313	1.12	148.0
7 X 3.36	59.76	14.59	87.93	2.28	1.47	6.03	2.88	6.500	.160	6.000	.313	1.20	145.6
7 X 3.47	65.04	15.85	102.15	2.45	1.56	6.44	2.96	7.000	.160	6.000	.313	1.28	143.5
8 X 3.82	71.70	17.64	120.35	2.64	1.68	6.82	3.26	7.500	.190	6.000	.313	1.62	141.8
8 X 3.94	77.72	19.02	137.53	2.82	1.77	7.23	3.35	8.000	.190	6.000	.313	1.71	140.2
9 X 4.34	83.84	21.06	159.92	3.01	1.91	7.59	3.70	8.500	.220	6.000	.313	2.09	138.7
9 X 4.47	89.91	22.57	180.42	3.18	2.01	7.99	3.81	9.000	.220	6.000	.313	2.20	137.4
10 X 4.60	95.99	24.11	202.34	3.36	2.11	8.39	3.92	9.500	.220	6.000	.313	2.31	136.2
9 X 4.76	86.95	23.95	176.36	3.14	2.05	7.45	4.06	8.500	.220	6.000	.375	2.09	138.7
9 X 4.89	93.13	25.63	200.96	3.33	2.16	7.84	4.17	9.000	.220	6.000	.375	2.20	137.4
10 X 5.02	99.34	27.34	225.09	3.51	2.27	8.23	4.28	9.500	.220	6.000	.375	2.31	136.2
9 X 5.42	91.20	26.65	207.12	3.34	2.27	7.23	4.62	8.500	.220	7.500	.375	2.09	180.4
10 X 5.50	105.54	29.91	256.35	3.70	2.43	8.57	4.68	10.000	.250	6.000	.375	2.75	135.0
9 X 5.55	97.54	30.60	232.93	3.53	2.39	7.61	4.73	9.000	.220	7.500	.375	2.20	176.5
11 X 5.64	111.77	31.76	284.45	3.89	2.55	8.95	4.81	10.500	.250	6.000	.375	2.88	134.0
10 X 5.68	103.90	32.56	260.42	3.72	2.51	7.99	4.84	9.500	.220	7.500	.375	2.31	176.8
11 X 5.79	118.06	33.65	314.22	4.07	2.66	9.34	4.93	11.000	.250	6.000	.375	3.00	132.9

14.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=14.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	108.35	33.27	280.03	3.83	2.58	8.42	5.05	10.000	.250	5.000	.438	2.75	135.0
11 X 6.07	114.66	35.30	310.40	4.02	2.71	8.79	5.17	10.500	.250	5.000	.438	2.86	134.0
10 X 6.16	110.21	35.40	294.73	3.91	2.67	8.33	5.25	10.000	.250	7.500	.375	2.75	175.2
11 X 6.21	121.61	37.36	342.55	4.21	2.83	9.17	5.30	11.000	.250	5.000	.438	3.00	132.9
11 X 6.30	116.56	37.52	326.43	4.11	2.80	8.70	5.37	10.500	.250	7.500	.375	2.88	173.8
11 X 6.45	122.96	39.67	359.95	4.30	2.93	9.07	5.50	11.000	.250	7.500	.375	3.00	172.4
12 X 7.38	133.08	43.95	430.01	4.60	3.22	9.78	6.29	12.000	.313	6.000	.438	4.07	131.0
13 X 7.56	146.05	48.31	489.63	4.79	3.35	10.15	6.45	12.500	.313	6.000	.438	4.23	130.1
12 X 7.62	135.73	46.48	450.12	4.69	3.32	9.66	6.49	12.000	.313	7.500	.375	4.07	169.9
13 X 7.80	147.19	48.93	491.42	4.68	3.46	10.04	6.65	12.500	.313	7.500	.375	4.23	168.8
13 X 7.96	142.73	50.32	502.26	4.91	3.52	9.96	6.80	12.500	.313	6.000	.500	4.23	130.1
13 X 7.99	148.58	51.42	534.82	5.07	3.60	10.40	6.81	13.000	.313	7.500	.375	4.38	167.7
13 X 8.16	149.19	52.58	546.59	5.11	3.66	10.34	6.95	13.000	.313	6.000	.500	4.38	129.2
14 X 8.17	155.02	53.95	580.34	5.26	3.74	10.76	6.96	13.500	.313	7.500	.375	4.54	166.7
14 X 8.35	155.07	55.48	593.06	5.30	3.81	10.69	7.11	13.500	.313	6.000	.500	4.54	128.4
12 X 8.41	140.20	53.99	506.82	4.89	3.61	9.39	7.16	12.000	.313	8.000	.438	4.07	183.2
13 X 8.59	146.64	56.75	552.59	5.09	3.76	9.74	7.32	12.500	.313	8.000	.438	4.23	182.0
13 X 8.76	153.42	59.55	600.60	5.29	3.91	10.09	7.46	13.000	.313	8.000	.438	4.38	180.8
14 X 8.96	160.01	62.39	650.87	5.48	4.07	10.43	7.63	13.500	.313	8.000	.438	4.54	179.7
12 X 8.97	142.74	59.18	543.66	5.01	3.81	9.19	7.64	12.000	.313	8.000	.500	4.07	183.2
13 X 9.15	149.41	62.16	592.60	5.21	3.97	9.53	7.80	12.500	.313	8.000	.500	4.23	182.0
13 X 9.34	156.08	65.18	643.08	5.41	4.12	9.86	7.95	13.000	.313	8.000	.500	4.38	180.8
14 X 9.52	162.77	68.23	697.14	5.62	4.28	10.22	8.11	13.500	.313	8.000	.500	4.54	179.7

TABLE 6

EFFECTIVE PLATING WIDTH = 16"

1/2" - 1" PLATE THICKNESSES

16.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 8.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.66	.51	.85	.32	.32	1.68	.43	1.500	.125	2.000	.125	.25	53.2
2 X .58	4.36	.70	1.52	.42	.35	2.15	.49	2.000	.125	2.000	.125	.31	49.3
3 X .65	6.39	.92	2.42	.53	.36	2.62	.55	2.500	.125	2.000	.125	.38	47.3
3 X .72	8.07	1.16	3.58	.64	.41	3.09	.62	3.000	.125	2.000	.125	.44	45.6
3 X .72	7.11	1.08	2.82	.57	.40	2.60	.62	2.500	.125	2.500	.125	.38	61.7
3 X .80	9.54	1.35	4.15	.69	.43	3.07	.68	3.000	.125	2.500	.125	.44	59.5
4 X .87	12.17	1.64	5.79	.81	.48	3.52	.74	3.500	.125	2.500	.125	.50	57.9
4 X .94	14.96	1.95	7.77	.94	.52	3.98	.80	4.000	.125	2.500	.125	.56	56.6
5 X 1.02	17.86	2.28	10.10	1.07	.57	4.43	.87	4.500	.125	2.500	.125	.63	55.6
5 X 1.09	20.85	2.63	12.83	1.20	.62	4.88	.93	5.000	.125	2.500	.125	.69	54.6
4 X 1.13	17.24	2.00	10.16	1.06	.59	3.91	.97	4.000	.125	3.000	.160	.56	70.1
5 X 1.16	23.91	2.99	15.96	1.33	.67	5.33	.99	5.500	.125	2.500	.125	.75	53.7
5 X 1.21	20.34	3.01	13.10	1.20	.64	4.56	1.03	4.500	.125	3.000	.160	.63	66.7
5 X 1.28	23.51	3.43	16.48	1.35	.70	4.80	1.09	5.000	.125	3.000	.160	.69	67.5
5 X 1.35	26.72	3.86	20.32	1.49	.76	5.24	1.15	5.500	.125	3.000	.160	.75	66.5
4 X 1.60	20.72	4.13	15.49	1.29	.75	3.75	1.36	4.000	.125	4.000	.220	.56	98.7
5 X 1.67	24.12	4.73	19.77	1.45	.82	4.18	1.42	4.500	.125	4.000	.220	.63	96.4
6 X 1.67	30.24	4.73	26.59	1.68	.88	5.02	1.43	6.000	.160	3.000	.160	1.04	65.5
5 X 1.74	27.55	5.35	24.62	1.61	.89	4.61	1.48	5.000	.125	4.000	.220	.69	94.5
7 X 1.77	33.52	5.28	31.93	1.83	.95	6.05	1.51	6.500	.160	3.000	.160	1.12	64.6
6 X 1.82	31.01	5.96	30.09	1.78	.97	5.03	1.55	5.500	.125	4.000	.220	.75	93.0
7 X 1.86	36.81	5.85	37.87	1.99	1.03	6.47	1.59	7.000	.160	3.000	.160	1.20	63.8
6 X 1.88	32.49	5.78	31.92	1.82	.98	5.52	1.61	6.000	.160	3.500	.190	1.04	78.4
7 X 1.98	35.66	6.42	36.12	1.98	1.06	5.94	1.69	6.500	.160	3.500	.190	1.12	77.4
7 X 2.07	39.25	7.68	44.98	2.15	1.15	6.35	1.77	7.000	.160	3.500	.190	1.20	76.4
6 X 2.13	34.46	7.00	37.83	1.96	1.10	5.40	1.82	6.000	.160	4.000	.220	1.04	91.6
7 X 2.22	37.95	7.74	44.99	2.13	1.19	5.81	1.90	6.500	.160	4.000	.220	1.12	90.4
7 X 2.32	41.42	8.50	52.88	2.30	1.28	6.22	1.98	7.000	.160	4.000	.220	1.20	89.3
6 X 2.50	36.96	9.11	47.51	2.16	1.29	5.21	2.18	6.000	.160	5.000	.250	1.04	119.0
7 X 2.65	40.55	10.02	56.25	2.34	1.39	5.61	2.26	6.500	.160	5.000	.250	1.12	117.3
7 X 2.79	44.15	10.96	65.84	2.52	1.49	6.01	2.34	7.000	.160	5.000	.250	1.20	115.8
8 X 3.10	47.66	12.37	78.59	2.72	1.65	6.35	2.64	7.500	.190	5.000	.250	1.52	114.5
8 X 3.21	51.24	13.42	90.38	2.90	1.76	6.74	2.74	8.000	.190	5.000	.250	1.62	113.3
6 X 3.28	39.48	12.59	82.05	2.40	1.57	4.93	2.80	6.000	.160	6.000	.313	1.04	148.0
7 X 3.36	43.22	13.80	95.21	2.59	1.69	5.31	2.86	6.500	.160	6.000	.313	1.12	145.6
7 X 3.47	46.97	15.03	85.38	2.79	1.82	5.68	2.96	7.000	.160	6.000	.313	1.20	143.5
8 X 3.82	50.82	16.71	106.49	2.99	1.99	6.01	3.26	7.500	.190	6.000	.313	1.52	141.8
8 X 3.94	54.36	18.04	115.13	3.18	2.12	6.36	3.35	8.000	.190	6.000	.313	1.62	140.2
8 X 4.34	58.03	19.94	133.57	3.38	2.30	6.70	3.70	8.500	.220	6.000	.313	1.98	138.7
9 X 4.47	61.77	21.39	150.93	3.57	2.44	7.06	3.81	9.000	.220	6.000	.313	2.09	137.4
10 X 4.60	65.52	22.86	169.50	3.77	2.59	7.41	3.92	9.500	.220	6.000	.313	2.20	136.2
9 X 4.76	59.25	22.67	147.59	3.50	2.49	6.51	4.06	8.500	.220	6.000	.375	1.98	135.7
9 X 4.89	63.07	24.29	166.59	3.70	2.64	6.86	4.17	9.000	.220	6.000	.375	2.09	137.4
10 X 5.02	66.89	25.93	186.87	3.90	2.79	7.21	4.28	9.500	.220	6.000	.375	2.20	136.2
9 X 5.42	60.97	27.15	169.07	3.66	2.77	6.23	4.62	8.500	.220	7.500	.375	1.98	180.4
10 X 5.50	70.72	28.31	212.26	4.09	3.00	7.50	4.68	10.000	.250	6.000	.375	2.63	135.0
9 X 5.55	64.68	29.03	190.52	3.87	2.94	6.56	4.73	9.000	.220	7.500	.375	2.09	178.5
11 X 5.64	74.57	30.07	235.74	4.29	3.16	7.84	4.81	10.500	.250	6.000	.375	2.75	134.0
10 X 5.68	68.80	30.93	213.37	4.08	3.10	6.90	4.84	9.500	.220	7.500	.375	2.20	176.8
11 X 5.79	78.42	31.87	260.62	4.49	3.32	8.18	4.93	11.000	.250	6.000	.375	2.88	132.9

16.0 IN. EFFECTIVE WIDTH

.500 IN. PLATE (AREA= 8.00 SQ. IN.)

NOM. D	X	LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10	X	5.92	71.89	31.50	229.96	4.20	3.20	7.80	5.05	10.000	.250	6.000	.438	2.63	135.0
11	X	6.37	75.80	33.43	255.18	4.40	3.37	7.63	5.17	10.500	.250	6.000	.438	2.75	134.0
10	X	6.16	72.77	33.54	241.03	4.27	3.31	7.19	5.25	10.000	.250	7.500	.375	2.63	175.2
11	X	6.21	79.73	35.39	281.88	4.60	3.54	7.96	5.30	11.000	.250	6.000	.438	2.88	132.9
11	X	6.30	76.72	35.56	267.28	4.47	3.48	7.52	5.37	10.500	.250	7.500	.375	2.75	173.8
11	X	6.45	80.07	37.62	295.02	4.68	3.56	7.84	5.50	11.000	.250	7.500	.375	2.88	172.4
12	X	7.38	87.94	41.40	351.86	4.90	4.00	8.50	6.29	12.000	.313	6.000	.438	3.91	131.0
13	X	7.50	91.95	43.62	384.61	5.16	4.18	8.82	6.45	12.500	.313	6.000	.438	4.07	130.1
12	X	7.62	89.00	43.82	367.35	5.03	4.12	8.38	6.49	12.000	.313	7.500	.375	3.91	169.9
13	X	7.80	93.05	46.13	400.94	5.23	4.31	8.69	6.65	12.500	.313	7.500	.375	4.07	168.8
13	X	7.98	95.24	47.41	408.58	5.25	4.36	8.62	6.80	12.500	.313	8.000	.500	4.07	130.1
13	X	7.99	97.12	48.46	436.24	5.43	4.49	9.01	6.81	13.000	.313	7.500	.375	4.23	167.7
13	X	8.16	97.33	49.82	444.86	5.45	4.57	8.93	6.95	13.000	.313	8.000	.500	4.23	129.2
14	X	8.17	101.21	50.86	473.80	5.63	4.68	9.32	6.96	13.500	.313	7.500	.375	4.38	166.7
14	X	8.35	101.44	52.26	482.90	5.69	4.76	9.24	7.11	13.500	.313	8.000	.500	4.38	128.4
12	X	8.41	91.15	50.93	400.43	5.19	4.48	8.02	7.16	12.000	.313	8.000	.438	3.91	163.2
13	X	8.59	95.31	53.54	445.66	5.39	4.68	8.32	7.32	12.500	.313	8.000	.438	4.07	162.0
13	X	8.78	99.50	56.18	484.71	5.60	4.87	8.63	7.48	13.000	.313	8.000	.438	4.23	180.8
14	X	8.96	103.69	58.85	525.60	5.80	5.07	8.93	7.63	13.500	.313	8.000	.438	4.38	179.7
12	X	8.97	92.27	55.82	434.75	5.27	4.71	7.79	7.64	12.000	.313	8.000	.500	3.91	163.2
13	X	9.15	96.50	58.63	474.15	5.48	4.91	8.09	7.80	12.500	.313	8.000	.500	4.07	162.0
13	X	9.34	100.75	61.48	515.46	5.68	5.12	8.38	7.95	13.000	.313	8.000	.500	4.23	180.8
14	X	9.52	105.02	64.36	558.69	5.89	5.32	8.68	8.11	13.500	.313	8.000	.500	4.38	179.7

16.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA=10.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	d	tw	wf	tf	SHEAR AREA	MAX. SPAN
2 X .50	2.50	.53	.33	.30	.37	1.75	.43	1.500	.125	2.000	.125	.27	53.2
2 X .58	4.14	.73	1.63	.39	.39	2.23	.49	2.000	.125	2.000	.125	.33	49.3
3 X .65	6.14	.95	2.58	.49	.42	2.71	.59	2.500	.125	2.000	.125	.39	47.3
3 X .72	8.46	1.19	3.79	.60	.45	3.18	.62	3.000	.125	2.000	.125	.45	45.8
3 X .72	6.91	1.12	3.01	.53	.44	2.69	.62	2.500	.125	2.500	.125	.39	61.7
3 X .80	9.42	1.39	4.40	.64	.47	3.16	.68	3.000	.125	2.500	.125	.45	59.5
4 X .87	12.20	1.68	6.10	.75	.50	3.62	.74	3.000	.125	2.500	.125	.52	57.9
4 X .94	15.21	2.00	8.16	.87	.54	4.09	.80	4.000	.125	2.500	.125	.58	56.6
5 X 1.02	18.42	2.33	10.59	.99	.58	4.55	.87	4.500	.125	2.500	.125	.64	55.6
5 X 1.09	21.78	2.68	13.42	1.11	.62	5.01	.93	5.000	.125	2.500	.125	.70	54.6
4 X 1.13	17.97	2.56	10.70	.99	.60	4.03	.97	4.000	.125	6.000	.160	.58	70.1
5 X 1.16	25.20	3.65	16.07	1.23	.66	5.47	.99	5.500	.125	2.500	.125	.77	53.7
5 X 1.21	21.47	3.07	13.76	1.12	.64	4.48	1.03	4.500	.125	3.000	.150	.64	68.7
5 X 1.26	25.10	3.50	17.28	1.25	.69	4.94	1.09	5.000	.125	3.000	.160	.70	67.5
5 X 1.35	28.84	3.95	21.28	1.38	.74	5.39	1.15	5.500	.125	3.000	.160	.77	66.5
4 X 1.40	22.49	4.22	16.42	1.20	.73	3.90	1.30	4.000	.125	4.000	.220	.58	98.7
5 X 1.67	26.45	4.82	20.89	1.35	.79	4.34	1.42	4.500	.125	4.000	.220	.64	96.4
5 X 1.67	33.24	4.62	27.90	1.56	.84	5.79	1.43	6.000	.160	3.000	.160	1.06	65.5
5 X 1.74	30.49	5.44	25.98	1.50	.85	4.77	1.48	5.000	.125	4.000	.220	.70	94.5
7 X 1.77	37.16	5.38	33.48	1.71	.90	6.22	1.51	6.500	.160	3.000	.160	1.14	64.6
5 X 1.82	34.00	6.09	31.70	1.66	.92	5.21	1.55	5.500	.125	4.000	.220	.77	93.0
7 X 1.86	41.11	5.96	39.69	1.85	.97	6.06	1.59	7.000	.160	3.000	.160	1.22	63.8
6 X 1.88	36.21	5.89	33.57	1.70	.93	5.70	1.61	6.000	.160	3.500	.190	1.06	78.4
7 X 1.96	40.26	6.63	40.06	1.85	1.00	6.13	1.69	6.500	.160	3.500	.190	1.14	77.4
7 X 2.07	44.35	7.20	47.25	2.00	1.07	6.56	1.77	7.000	.160	3.500	.190	1.22	76.4
6 X 2.13	38.91	7.13	39.91	1.84	1.03	5.60	1.82	6.000	.160	4.000	.220	1.06	91.6
7 X 2.22	43.09	7.87	47.43	2.00	1.10	6.02	1.90	6.500	.160	4.000	.220	1.14	90.4
7 X 2.32	47.36	8.64	55.72	2.16	1.18	6.45	1.98	7.000	.160	4.000	.220	1.22	89.3
8 X 2.50	42.38	9.27	50.39	2.03	1.19	5.44	2.18	6.000	.160	5.000	.250	1.06	119.0
7 X 2.65	46.74	10.19	59.61	2.21	1.28	5.85	2.26	6.500	.160	5.000	.250	1.14	117.3
7 X 2.75	51.11	11.14	69.72	2.38	1.36	6.26	2.34	7.000	.160	5.000	.250	1.22	115.8
8 X 3.10	55.47	12.59	83.37	2.57	1.50	6.62	2.64	7.500	.190	5.000	.250	1.54	114.5
8 X 3.21	59.84	13.65	95.84	2.74	1.60	7.02	2.74	8.000	.190	5.000	.250	1.64	113.3
6 X 3.28	48.07	12.81	86.46	2.28	1.44	5.18	2.80	6.000	.160	6.000	.313	1.06	148.0
7 X 3.38	50.63	14.03	78.26	2.47	1.55	5.56	2.88	6.500	.160	6.000	.313	1.14	145.6
7 X 3.47	55.19	15.27	91.21	2.65	1.65	5.97	2.96	7.000	.160	6.000	.313	1.22	143.5
8 X 3.62	59.00	16.99	107.42	2.85	1.80	6.32	3.26	7.500	.190	6.000	.313	1.54	141.8
8 X 3.34	64.23	18.34	123.05	3.04	1.92	6.71	3.35	8.000	.190	6.000	.313	1.64	140.2
9 X 4.34	68.09	20.29	142.95	3.23	2.08	7.04	3.70	8.500	.220	6.000	.313	2.01	138.7
9 X 4.47	73.25	21.77	161.51	3.42	2.20	7.42	3.81	9.000	.220	6.000	.313	2.12	137.4
10 X 4.60	77.62	23.27	181.36	3.61	2.33	7.79	3.92	9.000	.220	6.000	.313	2.23	136.2
9 X 4.76	70.43	23.08	158.62	3.36	2.25	6.87	4.06	8.000	.220	6.000	.375	2.01	138.7
9 X 4.89	75.08	24.72	178.99	3.55	2.38	7.24	4.17	9.000	.220	6.000	.375	2.12	137.4
10 X 5.02	79.73	26.39	200.74	3.75	2.52	7.61	4.28	9.500	.220	6.000	.375	2.23	136.2
9 X 5.42	72.64	27.63	182.79	3.54	2.51	6.62	4.62	8.500	.220	7.500	.375	2.01	180.4
10 X 5.50	84.30	28.84	228.31	3.94	2.71	7.92	4.68	10.000	.250	6.000	.375	2.66	135.0
9 X 5.55	77.59	29.54	205.90	3.74	2.65	6.97	4.73	9.000	.220	7.500	.375	2.12	178.5
11 X 5.64	88.96	30.64	253.56	4.14	2.85	8.27	4.81	10.500	.250	6.000	.375	2.78	134.0
10 X 5.68	82.35	31.47	230.53	3.94	2.80	7.33	4.84	9.500	.220	7.500	.375	2.23	176.8
11 X 5.79	93.62	32.46	260.32	4.33	2.99	8.63	4.93	11.000	.250	6.000	.375	2.91	132.9

16.0 IN. EFFECTIVE WIDTH

.625 IN. PLATE (AREA=10.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	85.91	32.09	248.24	4.06	2.89	7.74	5.05	10.000	.250	6.000	.438	2.66	135.0
11 X 5.37	90.05	34.06	275.44	4.20	3.04	8.09	5.17	10.500	.250	5.000	.438	2.78	134.0
10 X 6.16	97.07	34.16	280.68	4.14	2.99	7.03	5.25	10.000	.250	7.500	.375	2.66	175.2
11 X 6.21	95.39	36.00	304.22	4.46	3.19	8.44	5.30	11.000	.250	6.000	.438	2.91	132.9
11 X 6.30	91.84	36.22	269.00	4.34	3.15	7.98	5.37	10.500	.250	7.500	.375	2.78	173.8
11 X 6.45	96.62	36.32	318.96	4.54	3.30	8.32	5.50	11.000	.250	7.500	.375	2.91	172.4
12 X 7.38	104.98	42.30	360.66	4.83	3.63	9.00	6.29	12.000	.313	6.000	.438	3.95	131.0
13 X 7.56	109.79	44.58	410.11	5.03	3.79	9.33	6.45	12.500	.313	6.000	.438	4.11	130.1
12 X 7.62	106.33	44.76	397.09	4.91	3.74	8.88	6.49	12.000	.313	7.500	.375	3.95	169.9
13 X 7.86	111.18	47.13	434.40	5.11	3.91	9.22	6.65	12.500	.313	7.500	.375	4.11	168.8
13 X 7.98	111.45	48.45	443.22	5.14	3.98	9.15	6.80	12.500	.313	6.000	.500	4.11	130.1
13 X 7.99	116.03	49.53	472.96	5.30	4.08	9.55	6.81	13.000	.313	7.500	.375	4.26	167.7
13 X 8.16	116.34	50.92	482.56	5.33	4.15	9.46	6.95	13.000	.313	6.000	.500	4.26	129.2
14 X 8.17	120.90	51.97	513.41	5.50	4.25	9.88	6.96	13.500	.313	7.500	.375	4.42	166.7
14 X 8.35	121.25	53.42	523.81	5.53	4.32	9.80	7.11	13.500	.313	6.000	.500	4.42	128.4
12 X 8.41	109.13	52.02	444.74	5.09	4.08	8.55	7.16	12.000	.313	8.000	.438	3.95	185.2
13 X 8.59	114.11	54.79	485.21	5.29	4.25	8.87	7.32	12.500	.313	8.000	.438	4.11	182.0
13 X 8.78	119.09	57.39	527.60	5.49	4.43	9.19	7.48	13.000	.313	8.000	.438	4.26	180.8
14 X 8.96	124.09	60.13	572.12	5.70	4.61	9.51	7.63	13.500	.313	8.000	.438	4.42	179.7
12 X 8.97	110.02	57.01	474.99	5.19	4.29	8.33	7.64	12.000	.313	8.000	.500	3.95	183.2
13 X 9.15	115.07	59.90	517.94	5.39	4.48	8.65	7.80	12.500	.313	8.000	.500	4.11	182.0
13 X 9.34	120.73	62.81	562.95	5.60	4.66	8.96	7.95	13.000	.313	8.000	.500	4.26	180.8
14 X 9.52	125.81	65.77	610.06	5.80	4.85	9.28	8.11	13.500	.313	8.000	.500	4.42	179.7

16.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA=12.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .30	2.37	.55	1.01	.29	.43	1.82	.43	1.500	.125	2.000	.125	.28	53.2
2 X .38	3.02	.76	1.75	.37	.45	2.30	.49	2.000	.125	2.000	.125	.34	49.3
3 X .05	5.84	.98	2.73	.47	.47	2.78	.55	2.500	.125	2.000	.125	.41	47.3
3 X .72	8.12	1.23	4.00	.56	.49	3.26	.62	3.000	.125	2.000	.125	.47	45.8
3 X .72	6.63	1.15	3.19	.50	.48	2.77	.62	2.500	.125	2.500	.125	.41	61.7
3 X .80	9.12	1.43	4.03	.60	.51	3.24	.68	3.000	.125	2.500	.125	.47	59.5
4 X .87	11.93	1.72	6.40	.71	.54	3.71	.74	3.500	.125	2.500	.125	.53	57.9
4 X .94	15.03	2.04	8.53	.82	.57	4.18	.80	4.000	.125	2.500	.125	.59	56.6
5 X 1.02	18.38	2.36	11.04	.93	.60	4.65	.87	4.500	.125	2.500	.125	.66	55.6
5 X 1.09	21.95	2.73	13.97	1.04	.64	5.11	.93	5.000	.125	2.500	.125	.72	54.6
4 X 1.13	18.09	2.71	11.20	.93	.62	4.13	.97	4.000	.125	3.000	.160	.59	70.1
5 X 1.16	25.72	3.11	17.32	1.15	.67	5.08	.99	5.500	.125	2.500	.125	.78	53.7
5 X 1.21	21.83	3.13	14.36	1.05	.66	4.59	1.03	4.500	.125	3.000	.160	.66	68.7
5 X 1.28	25.76	3.56	18.00	1.17	.70	5.05	1.09	5.000	.125	3.000	.160	.72	67.5
5 X 1.35	29.80	4.02	22.13	1.30	.74	5.51	1.15	5.500	.125	3.000	.160	.78	66.5
4 X 1.60	23.43	4.30	17.25	1.14	.74	4.01	1.30	4.000	.125	4.000	.220	.59	98.7
5 X 1.67	27.79	4.91	21.89	1.28	.79	4.46	1.42	4.500	.125	4.000	.220	.66	96.4
5 X 1.67	35.01	4.91	29.05	1.47	.83	5.92	1.43	6.000	.160	3.000	.160	1.68	65.5
5 X 1.74	32.25	5.53	27.17	1.42	.84	4.91	1.48	5.000	.125	4.000	.220	.72	94.5
7 X 1.77	39.43	5.47	34.82	1.61	.88	6.37	1.51	6.500	.160	3.000	.160	1.16	64.6
5 X 1.82	30.91	6.18	33.10	1.55	.90	5.35	1.55	5.500	.125	4.000	.220	.78	93.0
7 X 1.80	43.34	6.06	41.26	1.74	.94	6.81	1.59	7.000	.160	3.000	.160	1.24	63.8
6 X 1.88	38.01	5.99	35.00	1.60	.91	5.84	1.61	6.000	.160	3.500	.190	1.08	78.4
7 X 1.96	43.23	6.64	41.73	1.75	.97	6.28	1.69	6.500	.160	3.500	.190	1.16	77.4
7 X 2.07	47.92	7.32	49.19	1.89	1.03	6.72	1.77	7.000	.160	3.500	.190	1.24	76.4
6 X 2.13	41.99	7.24	41.70	1.74	.99	5.76	1.82	6.000	.160	4.000	.220	1.08	91.6
7 X 2.22	46.79	8.10	49.51	1.89	1.06	6.19	1.90	6.500	.160	4.000	.220	1.16	90.4
7 X 2.32	51.65	8.77	58.12	2.04	1.13	6.62	1.98	7.000	.160	4.000	.220	1.24	89.3
6 X 2.36	46.46	9.42	52.85	1.93	1.14	5.61	2.18	6.000	.160	5.000	.250	1.08	119.0
7 X 2.55	51.50	10.35	62.46	2.09	1.21	6.04	2.20	6.500	.160	5.000	.250	1.16	117.3
7 X 2.75	56.58	11.30	72.99	2.26	1.29	6.46	2.34	7.000	.160	5.000	.250	1.24	115.6
8 X 3.10	61.79	12.78	87.36	2.44	1.41	6.84	2.64	7.500	.190	5.000	.250	1.57	114.5
8 X 3.21	66.91	13.85	100.39	2.61	1.50	7.25	2.74	8.000	.190	5.000	.250	1.66	113.3
6 X 3.28	51.42	13.01	70.37	2.18	1.36	5.39	2.80	6.000	.160	6.000	.313	1.08	148.0
7 X 3.30	56.72	14.24	82.51	2.35	1.45	5.80	2.88	6.500	.160	6.000	.313	1.16	145.6
7 X 3.47	62.06	15.49	96.07	2.53	1.55	6.20	2.96	7.000	.160	6.000	.313	1.24	143.5
8 X 3.82	67.35	17.24	113.25	2.72	1.68	6.57	3.26	7.500	.190	6.000	.313	1.57	141.8
8 X 3.94	72.70	18.81	129.63	2.91	1.78	6.97	3.35	8.000	.190	6.000	.313	1.66	140.2
9 X 4.34	78.00	20.60	150.74	3.10	1.93	7.32	3.70	8.500	.220	6.000	.313	2.04	138.7
9 X 4.47	83.35	22.09	170.25	3.28	2.04	7.71	3.81	9.000	.220	6.000	.313	2.15	137.4
10 X 4.60	88.71	23.61	191.14	3.46	2.15	8.10	3.92	9.500	.220	6.000	.313	2.26	136.2
9 X 4.76	80.63	23.43	167.76	3.23	2.09	7.16	4.06	8.500	.220	6.000	.375	2.04	136.7
9 X 4.89	85.78	25.09	189.24	3.42	2.21	7.54	4.17	9.000	.220	6.000	.375	2.15	137.4
10 X 5.02	91.24	26.78	212.18	3.61	2.33	7.92	4.28	9.500	.220	6.000	.375	2.26	136.2
9 X 5.42	86.53	28.04	194.19	3.42	2.32	6.93	4.62	8.500	.220	7.500	.375	2.04	183.4
10 X 5.50	96.61	29.29	241.59	3.81	2.50	8.25	4.68	10.000	.250	6.000	.375	2.69	135.0
9 X 5.55	89.12	29.97	216.00	3.62	2.45	7.30	4.73	9.000	.220	7.500	.375	2.15	176.5
11 X 5.64	102.08	31.12	266.27	4.00	2.63	8.62	4.81	10.500	.250	6.000	.375	2.81	134.0
10 X 5.68	94.70	31.92	244.73	3.81	2.58	7.67	4.84	9.500	.220	7.500	.375	2.26	176.8
11 X 5.79	107.55	32.98	296.56	4.16	2.76	8.39	4.93	11.000	.250	6.000	.375	2.94	132.9

16.0 IN. EFFECTIVE WIDTH

.750 IN. PLATE (AREA=12.00 SQ. IN.)

NOM. W X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
16 X 5.92	98.74	32.59	203.38	3.93	2.07	8.08	5.05	10.000	.250	5.000	.438	2.69	135.0
11 X 6.07	104.29	34.59	292.19	4.13	2.80	8.45	5.17	10.500	.250	6.000	.438	2.81	134.0
16 X 6.16	100.20	34.60	276.96	4.01	2.76	7.99	5.25	10.000	.250	7.500	.375	2.69	175.2
11 X 6.21	109.85	36.62	322.69	4.32	2.94	8.81	5.30	11.000	.250	6.000	.438	2.94	132.9
11 X 6.36	105.80	36.77	306.99	4.20	2.90	8.35	5.37	10.500	.250	7.500	.375	2.81	173.8
11 X 6.45	111.40	38.90	330.76	4.40	3.04	8.71	5.50	11.000	.250	7.500	.375	2.94	172.4
12 X 7.38	120.91	43.03	404.60	4.70	3.35	9.40	6.29	12.000	.313	6.000	.438	3.99	161.0
15 X 7.50	126.51	45.35	442.33	4.90	3.50	9.75	6.45	12.500	.313	6.000	.438	4.15	130.1
12 X 7.62	122.57	45.52	423.24	4.78	3.45	9.30	6.49	12.000	.313	7.500	.375	3.99	169.9
15 X 7.80	128.21	47.93	462.30	4.98	3.61	9.64	6.65	12.500	.313	7.500	.375	4.15	168.8
15 X 7.98	128.61	49.29	472.13	5.01	3.67	9.58	6.80	12.500	.313	8.000	.500	4.15	130.1
13 X 7.99	133.67	50.38	503.34	5.17	3.76	9.99	6.81	13.000	.313	7.500	.375	4.30	167.7
15 X 8.16	134.30	51.80	514.03	5.21	3.83	9.92	6.95	13.000	.313	8.000	.500	4.30	129.2
14 X 8.17	139.53	52.87	540.38	5.37	3.92	10.33	6.96	13.500	.313	7.500	.375	4.46	166.7
14 X 8.35	140.00	54.36	557.97	5.40	3.99	10.26	7.11	13.500	.313	8.000	.500	4.46	128.4
12 X 8.41	126.13	52.90	475.16	4.98	3.77	8.98	7.16	12.000	.313	8.000	.438	3.99	183.2
13 X 8.59	131.91	55.51	518.35	5.18	3.93	9.32	7.32	12.500	.313	8.000	.438	4.15	182.0
13 X 8.78	137.70	58.37	563.05	5.38	4.09	9.06	7.48	13.000	.313	8.000	.438	4.30	180.8
14 X 8.96	143.50	61.16	611.10	5.58	4.26	9.39	7.63	13.500	.313	8.000	.438	4.46	179.7
12 X 8.97	128.03	57.98	506.84	5.09	3.97	8.78	7.64	12.000	.313	8.000	.500	3.99	183.2
13 X 9.15	133.90	60.92	554.76	5.29	4.14	9.11	7.80	12.500	.313	8.000	.500	4.15	182.0
13 X 9.34	139.78	63.89	602.89	5.50	4.31	9.44	7.95	13.000	.313	8.000	.500	4.30	180.8
14 X 9.52	145.67	66.89	653.26	5.70	4.48	9.77	8.11	13.500	.313	8.000	.500	4.46	179.7

AD-A031 490 NAVAL SHIP ENGINEERING CENTER HYATTSVILLE MD F/G 11/6
PROPERTIES OF COMBINED ALUMINUM TEE EXTRUSION AND PLATE,(U)
AUG 76 P WITHERELL, E ARONNE
UNCLASSIFIED NAVSEC-6114-142-76 NL

2 OF 2
ADA031490

END
DATE FILMED
12-76

16.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=14.00 SQ. IN.)

NOM. D	X	LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2	X	.50	2.26	.58	1.09	.28	.48	1.89	.43	1.500	.125	2.000	.125	.30	53.2
2	X	.38	3.72	.79	1.86	.36	.50	2.37	.49	2.000	.125	2.000	.125	.36	49.3
3	X	.65	5.56	1.01	2.89	.45	.52	2.85	.55	2.500	.125	2.000	.125	.42	47.3
3	X	.72	7.76	1.26	4.26	.54	.54	3.33	.62	3.000	.125	2.000	.125	.48	45.8
3	X	.72	6.35	1.19	3.36	.48	.53	2.84	.62	2.500	.125	2.500	.125	.42	61.7
3	X	.80	8.76	1.47	4.87	.58	.56	3.32	.68	3.000	.125	2.500	.125	.48	59.5
4	X	.87	11.54	1.76	6.70	.67	.58	3.79	.74	3.500	.125	2.500	.125	.55	57.9
4	X	.94	14.63	2.08	8.89	.77	.61	4.27	.80	4.000	.125	2.500	.125	.61	56.6
5	X	1.02	18.03	2.42	11.46	.88	.64	4.74	.87	4.500	.125	2.500	.125	.67	55.6
5	X	1.09	21.76	2.78	14.48	.98	.67	5.21	.93	5.000	.125	2.500	.125	.73	54.8
4	X	1.13	17.88	2.77	11.68	.88	.65	4.22	.97	4.000	.125	3.000	.160	.61	70.1
6	X	1.16	25.61	3.16	17.93	1.09	.70	5.07	.99	5.500	.125	2.500	.125	.80	53.7
5	X	1.21	21.74	3.18	14.93	1.00	.69	4.69	1.03	4.500	.125	3.000	.160	.67	68.7
5	X	1.28	25.84	3.62	18.07	1.11	.72	5.15	1.09	5.000	.125	3.000	.160	.73	67.5
6	X	1.35	30.16	4.06	22.92	1.23	.76	5.61	1.15	5.500	.125	3.000	.160	.80	66.5
4	X	1.60	23.82	4.38	18.03	1.08	.76	4.12	1.36	4.000	.125	4.000	.220	.61	98.7
5	X	1.67	28.44	4.39	22.82	1.22	.80	4.57	1.42	4.500	.125	4.000	.220	.67	96.4
6	X	1.67	33.86	4.39	30.10	1.40	.84	5.04	1.43	5.000	.160	3.000	.160	1.10	65.5
5	X	1.74	33.27	5.62	28.20	1.35	.85	5.03	1.48	5.000	.125	4.000	.220	.73	94.5
7	X	1.77	40.69	5.56	36.05	1.52	.89	6.49	1.51	6.500	.160	3.000	.160	1.18	64.6
6	X	1.82	38.27	6.28	34.37	1.49	.90	5.48	1.53	5.500	.125	4.000	.220	.80	93.0
7	X	1.86	45.63	6.15	42.68	1.65	.94	6.94	1.59	7.000	.160	3.000	.160	1.26	63.8
6	X	1.98	40.03	6.98	38.31	1.53	.91	5.97	1.81	6.000	.160	3.500	.190	1.10	78.4
7	X	1.98	45.09	6.74	43.25	1.66	.96	6.42	1.89	6.500	.160	3.500	.190	1.18	77.4
7	X	2.07	50.27	7.42	50.93	1.80	1.01	6.86	1.77	7.000	.160	3.500	.190	1.26	76.4
6	X	2.13	44.00	7.35	43.32	1.65	.98	5.89	1.82	6.000	.160	4.000	.220	1.10	91.6
7	X	2.22	49.31	8.11	51.38	1.80	1.04	6.33	1.90	6.500	.160	4.000	.220	1.18	90.4
7	X	2.32	54.71	8.90	60.26	1.94	1.10	6.77	1.98	7.000	.160	4.000	.220	1.26	89.3
6	X	2.56	49.41	9.25	55.04	1.84	1.11	5.76	2.18	6.000	.160	5.000	.250	1.10	119.0
7	X	2.65	55.03	10.49	64.98	2.00	1.18	6.19	2.26	6.500	.160	5.000	.250	1.18	117.3
7	X	2.75	60.73	11.45	75.88	2.15	1.25	6.63	2.34	7.000	.160	5.000	.250	1.26	115.8
8	X	3.10	66.75	12.90	90.87	2.34	1.36	7.01	2.64	7.500	.190	5.000	.250	1.59	114.5
8	X	3.21	72.55	14.03	104.37	2.50	1.44	7.44	2.74	8.000	.190	5.000	.250	1.69	113.3
6	X	3.28	55.63	13.19	73.32	2.09	1.32	5.56	2.80	6.000	.160	5.000	.313	1.10	148.0
7	X	3.38	61.61	14.43	86.24	2.26	1.40	5.98	2.88	6.500	.160	6.000	.313	1.18	145.6
7	X	3.47	67.04	15.69	100.32	2.43	1.48	6.39	2.96	7.000	.160	6.000	.313	1.26	143.5
8	X	3.82	73.75	17.47	118.30	2.62	1.60	6.77	3.26	7.500	.190	6.000	.313	1.59	141.8
8	X	3.94	79.83	18.85	135.32	2.79	1.70	7.18	3.35	8.000	.190	6.000	.313	1.69	140.2
9	X	4.34	85.96	20.88	157.47	2.98	1.83	7.54	3.70	8.500	.220	6.000	.313	2.06	138.7
9	X	4.47	92.06	22.38	177.79	3.16	1.93	7.94	3.81	9.000	.220	6.000	.313	2.17	137.4
10	X	4.60	98.21	23.92	199.54	3.34	2.03	8.34	3.92	9.500	.220	6.000	.313	2.28	136.2
9	X	4.76	86.95	23.74	175.06	3.12	1.97	7.40	4.06	8.500	.220	6.000	.375	2.06	138.7
9	X	4.89	95.16	25.41	196.07	3.30	2.08	7.79	4.17	9.000	.220	6.000	.375	2.17	137.4
10	X	5.02	101.43	27.12	222.01	3.49	2.19	8.19	4.28	9.500	.220	6.000	.375	2.28	136.2
9	X	5.42	93.04	26.41	204.04	3.31	2.19	7.18	4.62	8.500	.220	7.500	.375	2.06	180.4
10	X	5.50	107.62	29.68	252.99	3.68	2.35	8.52	4.68	10.000	.250	5.000	.375	2.72	135.0
9	X	5.25	99.42	30.35	229.04	3.50	2.31	7.57	4.73	9.000	.220	7.500	.375	2.17	178.5
11	X	5.84	113.87	31.53	286.88	3.86	2.47	8.91	4.81	10.500	.250	6.000	.375	2.84	134.0
10	X	5.68	105.82	32.36	256.92	3.69	2.43	7.95	4.84	9.500	.220	7.500	.375	2.28	176.8
11	X	5.79	120.16	33.41	310.45	4.05	2.58	9.29	4.93	11.000	.250	6.000	.375	2.97	132.9

16.0 IN. EFFECTIVE WIDTH

.875 IN. PLATE (AREA=14.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	110.32	33.02	276.39	3.61	2.51	8.37	5.05	10.000	.250	5.000	.438	2.72	135.0
11 X 6.07	110.67	35.04	306.56	4.00	2.83	8.75	5.17	10.500	.250	5.000	.438	2.84	134.0
10 X 8.16	112.12	35.14	290.94	3.89	2.59	8.28	5.25	10.000	.250	7.500	.375	2.72	175.2
11 X 8.21	123.03	37.10	336.49	4.19	2.75	9.12	5.30	11.000	.250	5.000	.438	2.97	132.9
11 X 8.30	118.53	37.25	322.42	4.08	2.72	8.65	5.37	10.500	.250	7.500	.375	2.84	173.8
11 X 8.45	124.94	39.40	355.72	4.27	2.85	9.03	5.50	11.000	.250	7.500	.375	2.97	172.4
12 X 7.36	135.00	43.36	425.28	4.56	3.13	9.74	6.29	12.000	.313	6.000	.438	4.03	131.0
13 X 7.56	142.04	46.01	464.85	4.77	3.27	10.10	6.49	12.500	.313	6.000	.438	4.19	130.1
12 X 7.62	137.66	46.18	445.21	4.66	3.23	9.64	6.49	12.000	.313	7.500	.375	4.03	169.9
13 X 7.80	144.09	48.63	486.27	4.85	3.37	10.00	6.65	12.500	.313	7.500	.375	4.19	168.8
13 X 7.96	144.63	50.01	497.00	4.89	3.44	9.94	6.80	12.500	.313	8.000	.500	4.19	130.1
13 X 7.99	150.54	51.11	529.42	5.04	3.52	10.36	6.81	13.000	.313	7.500	.375	4.34	167.7
13 X 8.16	151.12	52.56	541.07	5.08	3.58	10.29	6.95	13.000	.313	8.000	.500	4.34	129.2
14 X 8.17	156.99	53.04	574.08	5.24	3.56	10.71	6.96	13.500	.313	7.500	.375	4.50	166.7
14 X 8.35	157.61	55.15	587.30	5.27	3.73	10.05	7.11	13.500	.313	8.000	.500	4.50	128.4
12 X 8.41	142.05	53.05	501.39	4.87	3.53	9.35	7.16	12.000	.313	8.000	.438	4.03	183.2
13 X 8.59	148.04	56.41	546.90	5.05	3.68	9.70	7.32	12.500	.313	8.000	.438	4.19	182.0
13 X 8.78	155.23	59.20	594.04	5.26	3.83	10.04	7.48	13.000	.313	8.000	.438	4.34	180.8
14 X 8.96	161.84	62.03	644.65	5.46	3.98	10.39	7.63	13.500	.313	8.000	.438	4.50	179.7
12 X 8.97	144.43	58.81	538.09	4.99	3.73	9.15	7.64	12.000	.313	8.000	.500	4.03	183.2
13 X 9.15	151.11	61.79	586.55	5.19	3.88	9.49	7.80	12.500	.313	8.000	.500	4.19	182.0
13 X 9.34	157.81	64.80	637.36	5.39	4.04	9.84	7.95	13.000	.313	8.000	.500	4.34	180.8
14 X 9.52	164.51	67.85	690.54	5.59	4.20	10.18	8.11	13.500	.313	8.000	.500	4.50	179.7

16.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=16.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	K	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
2 X .50	2.18	.60	1.18	.27	.54	1.96	.43	1.500	.125	2.000	.125	.31	53.2
2 X .58	3.56	.81	1.98	.35	.56	2.44	.49	2.000	.125	2.000	.125	.38	49.3
3 X .65	5.31	1.04	3.05	.43	.57	2.93	.55	2.500	.125	2.000	.125	.44	47.3
3 X .72	7.42	1.29	4.40	.51	.59	3.41	.62	3.000	.125	2.000	.125	.50	45.8
3 X .72	6.08	1.22	3.56	.46	.59	2.91	.62	2.500	.125	2.500	.125	.44	61.7
3 X .80	8.42	1.50	5.10	.55	.61	3.39	.68	3.000	.125	2.500	.125	.50	59.5
4 X .87	11.11	1.80	8.99	.65	.63	3.87	.74	3.500	.125	2.500	.125	.56	57.9
4 X .94	14.16	2.13	9.25	.74	.65	4.35	.80	4.000	.125	2.500	.125	.63	56.6
5 X 1.02	17.54	2.47	11.90	.84	.68	4.82	.87	4.500	.125	2.500	.125	.69	55.6
5 X 1.09	21.22	2.83	14.99	.94	.71	5.29	.93	5.000	.125	2.500	.125	.75	54.6
4 X 1.13	17.51	2.82	12.14	.85	.69	4.31	.97	4.000	.125	3.000	.100	.63	70.1
6 X 1.16	25.19	3.21	18.52	1.04	.74	5.76	.99	5.500	.125	2.500	.125	.81	53.7
5 X 1.21	21.39	3.24	15.49	.95	.72	4.78	1.03	4.500	.125	3.000	.160	.69	68.7
5 X 1.28	25.27	3.68	19.32	1.06	.76	5.24	1.09	5.000	.125	3.000	.160	.75	67.5
6 X 1.35	30.01	4.15	23.30	1.17	.79	5.71	1.15	5.500	.125	3.000	.160	.81	66.5
4 X 1.66	23.85	4.46	16.78	1.04	.79	4.21	1.36	4.000	.125	4.000	.220	.63	98.7
5 X 1.67	28.63	5.06	25.71	1.17	.83	4.67	1.42	4.500	.125	4.000	.220	.69	96.4
6 X 1.67	36.15	5.07	31.11	1.34	.86	6.14	1.43	6.000	.160	3.000	.100	1.12	69.5
5 X 1.74	33.67	5.71	29.30	1.29	.87	5.13	1.48	5.000	.125	4.000	.220	.75	94.5
7 X 1.77	41.22	5.04	37.21	1.46	.90	6.60	1.51	6.500	.160	3.000	.160	1.20	64.6
5 X 1.82	30.93	6.37	35.57	1.42	.91	5.59	1.55	5.500	.125	4.000	.220	.81	93.0
7 X 1.86	46.48	6.24	44.00	1.58	.95	7.05	1.59	7.000	.160	3.000	.100	1.28	63.8
6 X 1.88	40.72	6.18	37.54	1.46	.92	6.08	1.61	6.000	.100	3.500	.190	1.12	78.4
7 X 1.98	46.11	6.04	44.00	1.59	.97	6.53	1.69	6.500	.100	3.500	.190	1.20	77.4
7 X 2.07	51.07	7.52	52.55	1.72	1.02	6.98	1.77	7.000	.160	3.500	.190	1.28	76.4
6 X 2.13	49.19	7.46	44.85	1.59	.99	6.01	1.82	6.000	.160	4.000	.220	1.12	91.6
7 X 2.22	50.89	8.23	53.11	1.72	1.04	6.46	1.90	6.500	.100	4.000	.220	1.20	90.4
7 X 2.32	56.73	9.01	62.23	1.86	1.10	6.90	1.98	7.000	.160	4.000	.220	1.28	89.3
6 X 2.50	51.44	9.09	57.07	1.77	1.11	5.89	2.18	6.000	.100	5.000	.250	1.12	119.0
7 X 2.65	57.54	10.63	67.30	1.92	1.17	6.33	2.20	6.500	.100	5.000	.250	1.20	117.3
7 X 2.75	63.76	11.60	78.50	2.07	1.23	6.77	2.34	7.000	.160	5.000	.250	1.28	115.8
8 X 3.10	70.53	13.12	94.05	2.25	1.33	7.17	2.64	7.500	.190	5.000	.250	1.62	114.5
8 X 3.21	78.93	14.21	107.96	2.40	1.40	7.60	2.74	8.000	.190	5.000	.250	1.71	113.3
6 X 3.28	58.87	13.37	76.29	2.01	1.30	5.70	2.80	6.000	.160	5.000	.313	1.12	148.0
7 X 3.38	65.43	14.62	89.62	2.18	1.37	6.13	2.88	6.500	.100	5.000	.313	1.20	145.6
7 X 3.47	72.08	15.89	104.15	2.34	1.44	6.56	2.96	7.000	.160	5.000	.313	1.28	143.5
8 X 3.82	78.95	17.69	122.84	2.53	1.56	6.94	3.26	7.500	.190	5.000	.313	1.62	141.8
8 X 3.94	85.71	19.07	140.42	2.69	1.64	7.36	3.35	8.000	.190	5.000	.313	1.71	140.2
9 X 4.34	92.06	21.13	163.48	2.86	1.76	7.74	3.70	8.500	.220	5.000	.313	2.09	138.7
9 X 4.47	99.49	22.65	184.50	3.05	1.85	8.15	3.81	9.000	.220	5.000	.313	2.20	137.4
10 X 4.88	108.35	24.20	208.99	3.22	1.95	8.55	3.92	9.500	.220	5.000	.313	2.31	136.2
9 X 4.76	96.53	24.03	182.70	3.02	1.90	7.60	4.06	8.500	.220	5.000	.375	2.09	138.7
9 X 4.89	103.31	25.72	205.91	3.20	1.99	8.01	4.17	9.000	.220	6.000	.375	2.20	137.4
10 X 5.02	111.30	27.44	230.71	3.37	2.09	8.41	4.28	9.500	.220	5.000	.375	2.31	136.2
9 X 5.42	101.37	26.75	212.79	3.21	2.10	7.40	4.62	8.500	.220	7.500	.375	2.09	180.4
10 X 5.56	117.33	30.04	263.08	3.57	2.24	8.76	4.68	10.000	.250	6.000	.375	2.75	135.0
9 X 5.55	108.93	30.71	239.37	3.40	2.21	7.79	4.73	9.000	.220	7.500	.375	2.20	178.5
11 X 5.04	124.35	31.91	292.01	3.75	2.35	9.15	4.81	10.500	.250	5.000	.375	2.88	134.0
10 X 5.08	115.70	32.70	267.70	3.58	2.31	8.19	4.84	9.500	.220	7.500	.375	2.31	176.8
11 X 5.79	131.39	33.81	322.66	3.93	2.46	9.54	4.93	11.000	.250	5.000	.375	3.00	132.9

16.0 IN. EFFECTIVE WIDTH

1.000 IN. PLATE (AREA=16.00 SQ. IN.)

NOM. D X LB/FT	ZPL	ZFL	INERTIA	R	YP	YF	BEAM DIMENSIONS AREA	D	TW	WF	TF	SHEAR AREA	MAX. SPAN
10 X 5.92	120.65	33.42	207.89	3.70	2.39	8.61	5.05	10.000	.250	5.000	.436	2.75	135.0
11 X 6.07	127.79	35.46	319.22	3.88	2.50	9.00	5.17	10.500	.250	6.000	.436	2.88	134.0
10 X 6.16	122.82	33.95	303.30	3.78	2.47	8.53	5.25	10.000	.250	7.500	.375	2.75	175.2
11 X 6.21	134.93	37.54	352.40	4.07	2.61	9.39	5.30	11.000	.250	5.000	.436	3.00	132.9
11 X 6.30	130.01	37.09	336.02	3.97	2.58	8.92	5.37	10.500	.250	7.500	.375	2.88	173.6
11 X 6.49	137.21	39.86	370.04	4.15	2.70	9.30	5.50	11.000	.250	7.500	.375	3.00	172.4
12 X 7.38	149.19	44.22	443.45	4.40	2.87	10.03	6.29	12.000	.313	6.000	.436	4.07	131.0
13 X 7.56	150.35	46.60	484.67	4.65	3.10	10.40	6.45	12.500	.313	6.000	.436	4.23	130.1
12 X 7.62	151.55	46.76	464.57	4.54	3.07	9.93	6.49	12.000	.313	7.500	.375	4.07	169.9
13 X 7.66	156.77	49.24	507.37	4.73	3.20	10.30	6.65	12.500	.313	7.500	.375	4.23	168.8
13 X 7.98	159.48	50.64	518.89	4.77	3.25	10.25	6.80	12.500	.313	6.000	.500	4.23	130.1
13 X 7.99	160.30	51.75	552.35	4.92	3.33	10.67	6.81	13.000	.313	7.500	.375	4.38	167.7
13 X 8.16	166.75	53.23	564.80	4.96	3.39	10.61	6.95	13.000	.313	8.000	.500	4.38	129.2
14 X 8.17	170.24	54.31	599.55	5.11	3.46	11.04	6.96	13.500	.313	7.500	.375	4.54	166.7
14 X 8.53	174.03	55.85	613.08	5.15	3.52	10.98	7.11	13.500	.313	8.000	.500	4.54	128.4
12 X 8.41	196.80	64.32	624.53	4.76	3.34	9.66	7.16	12.000	.313	8.000	.438	4.07	183.2
13 X 8.59	164.24	57.11	572.06	4.95	3.48	10.02	7.32	12.500	.313	8.000	.438	4.23	182.0
13 X 8.78	171.64	59.94	621.93	5.15	3.62	10.38	7.48	13.000	.313	8.000	.438	4.38	180.8
14 X 8.96	179.05	62.80	674.17	5.34	3.77	10.73	7.63	13.500	.313	8.000	.438	4.54	179.7
12 X 8.97	159.77	59.55	563.92	4.68	3.53	9.47	7.54	12.000	.313	8.000	.500	4.07	183.2
13 X 9.15	167.26	62.55	614.61	5.08	3.07	9.83	7.80	12.500	.313	8.000	.500	4.23	182.0
13 X 9.34	174.77	65.60	667.75	5.28	3.82	10.18	7.95	13.000	.313	8.000	.500	4.38	180.8
14 X 9.52	182.28	68.69	723.38	5.48	3.97	10.53	8.11	13.500	.313	8.000	.500	4.54	179.7

References

1. Nappi and Lev, Properties of Combined Aluminum Beam and Plate, NSRDC Report 4336 (1974)

2. NAVSHIPS, A Guide for the Selection and Use of Aluminum Alloys for Structure of Ships of the U.S. Navy, NAVSHIPS 090-029-9010 (1971)

3. Design Data Sheet, DDS 1100 - 3, Strength of Structural Members (1956)

4. A Guide for the Analysis of Ship Structures, a Government Research Report (1960)

5. Rohr, Weight Sensitivity to Stiffener and Frame Spacings for the 2K SES Hull Structure, CDRL No. 5005 (H-5) A (August 1975)

Distribution

NAVSEC 6110A

6114

6034

6128 (3)

NAVSEA 09G3

PMS 304 (2)

Defense Documentation Center (3)

DTNSRDC (Code 1730.1) (3)